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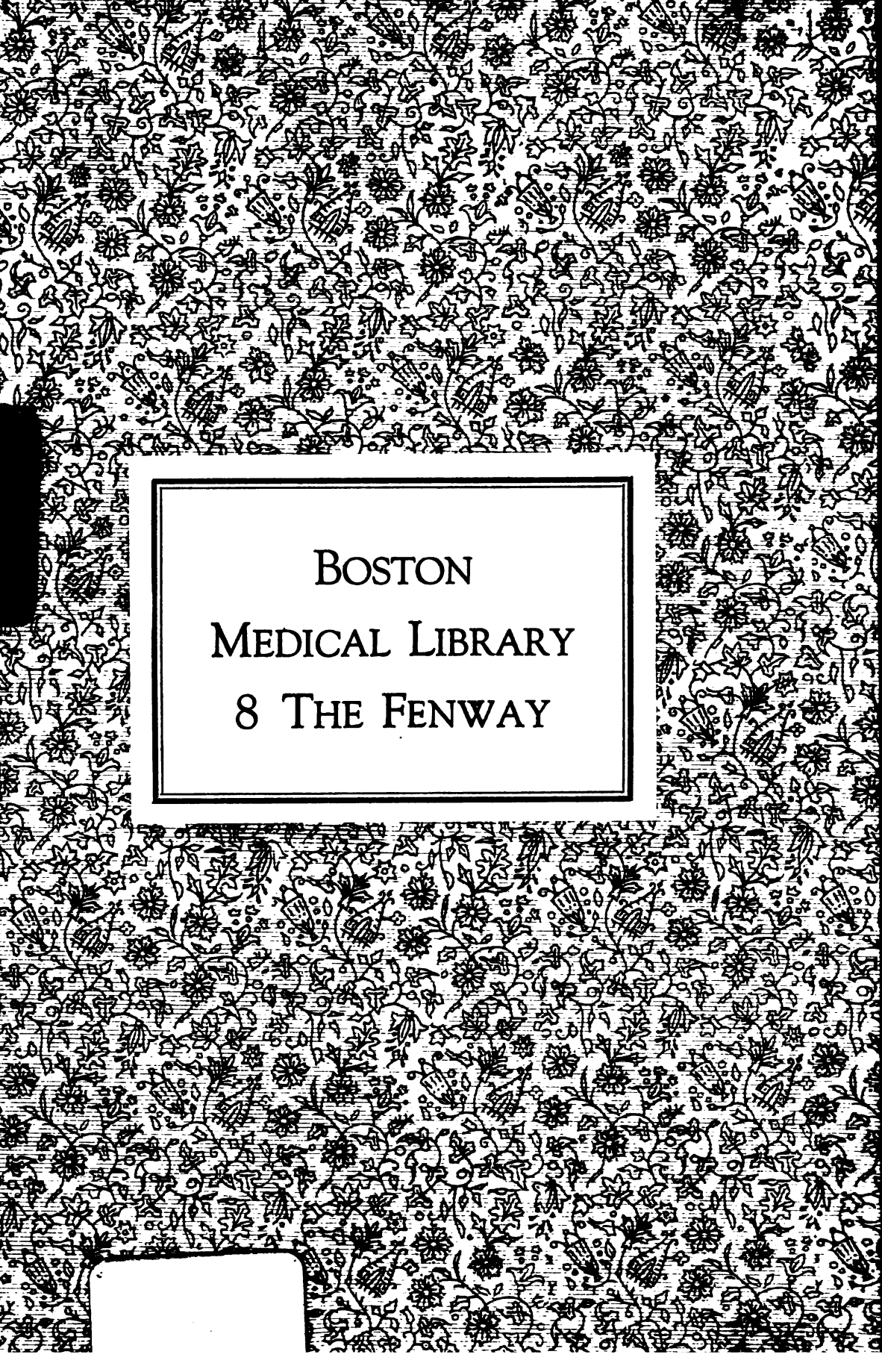
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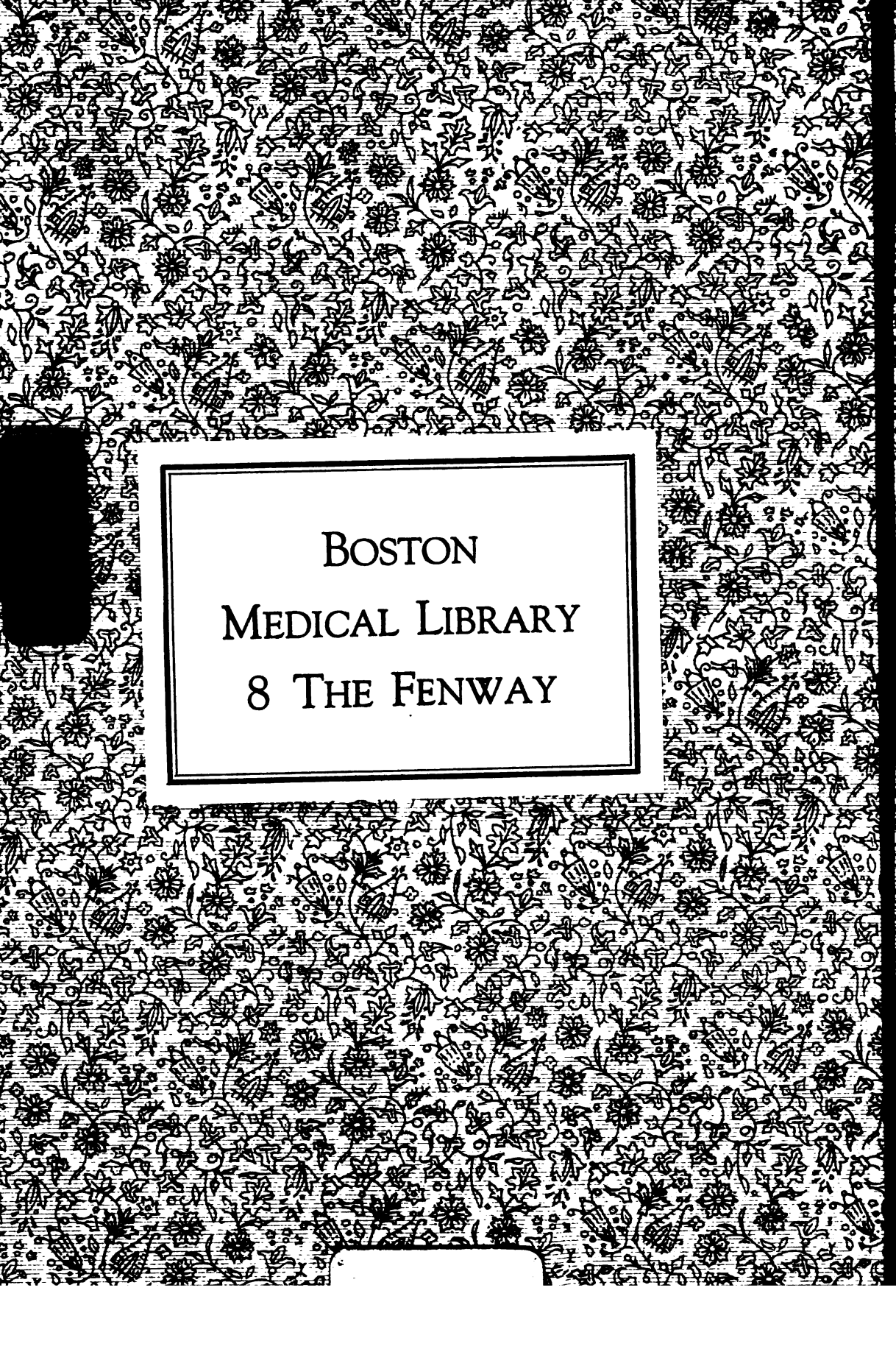
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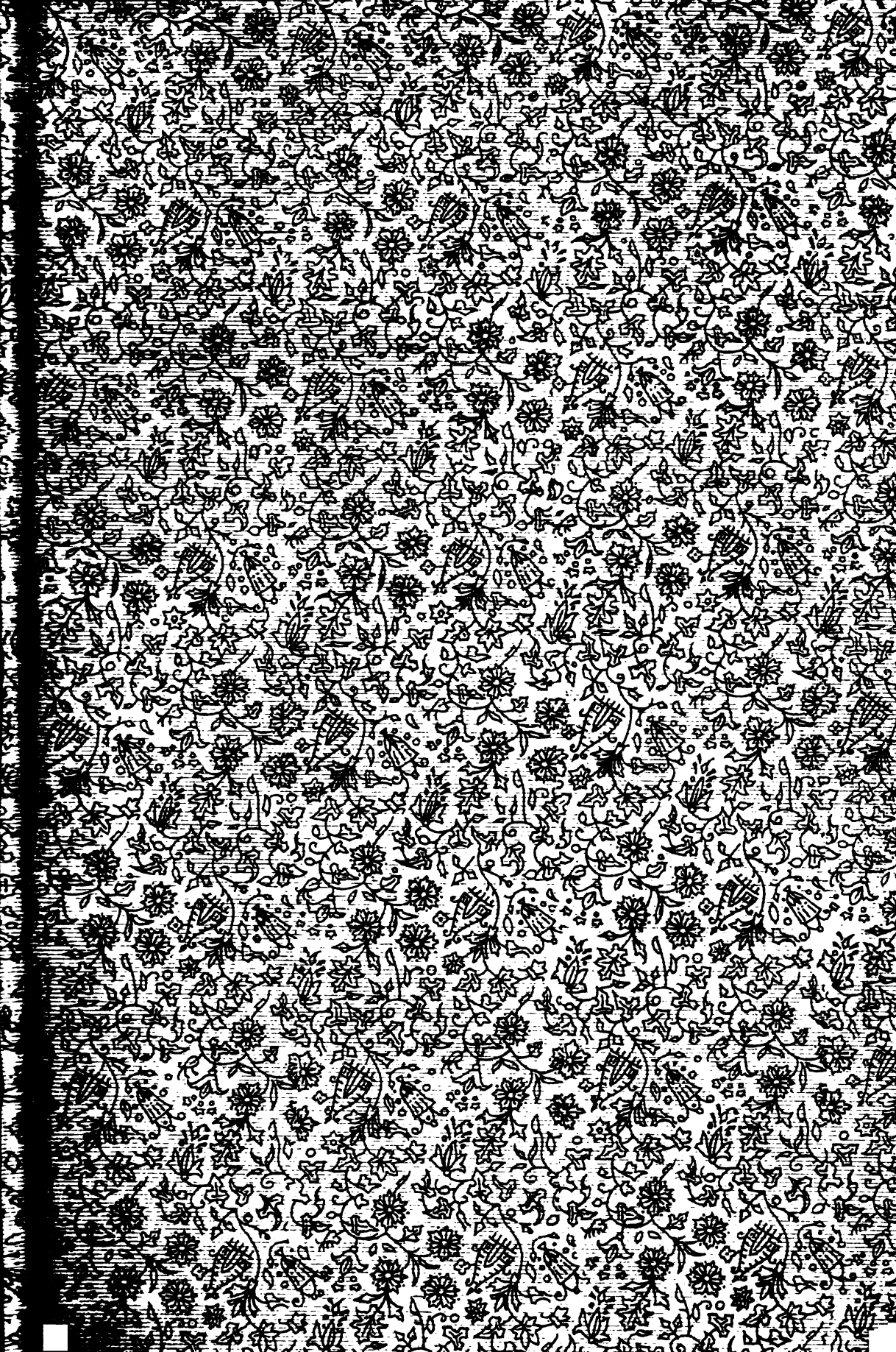
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THE  
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General, Special, and Physiological Therapeutics.

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GEORGE S. DAVIS,

DETROIT, MICH., AND PHILADELPHIA, PA.

1894

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## Original Communications.

### THE SURGICAL TREATMENT OF POTT'S DISEASE.\*

READ BEFORE THE ORTHOPÆDIC SECTION OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, OCTOBER 20, 1893.

By W. W. KEEN, M.D.,

Professor of Principles of Surgery and of Clinical Surgery in the Jefferson Medical College.

THE first laminectomy for Pott's disease seems to have been done by Jackson, of Sheffield (*Brit. Med. Journ.*, 1883, i. p. 812); but the modern surgery of Pott's disease really dates from the operation of Macewen (*Lancet*,

1885, i. 881), when he operated on a case of paraplegia with incontinence of urine and feces, due to a connective-tissue tumor at the seat of angular curvature of the spine. In this boy, nine years of age, between the theca and the bone was found a fibrous neoplasm one-eighth of an inch in thickness, firmly attached to the theca and covering two-thirds of its circumference. After this was dissected away, the cord was able to expand backward, and pulsation, which had been absent, showed itself, especially opposite the fifth dorsal vertebra. Twenty-four hours after the removal of the pressure the limbs had lost their livid color and were warm; the spastic rigidity was greatly lessened; the perception of tickling the soles had returned and that of touch was improved. Movement was first observed eight days later, and soon after this he had perfect

\* The first part of this paper is part of a paper on the "Surgery of the Spine" in the supplementary volume of Buck's "Reference Hand-Book of the Medical Sciences."

control over the sphincters. After six months he was able to go about without support. Five years afterwards he could walk three miles; attended school regularly, joining in all the games, including even foot-ball.

A second and more aggravated case (*Brit. Med. Journ.*, 1888, ii. 308), operated on in 1884, showed a slight tumor with organic changes in the cord, which had shrunk to about half its normal dimensions. In ten hours after the operation the limbs had lost their lividity and felt warm. From the fourth day she obtained control over her bladder and rectum; six weeks after the operation she could move her limbs freely; and two months after walked a quarter of a mile and was able to perform light duties in the house.

Three other similar cases were operated on, one of which was successful, but the other two died. Besides these cases, he reported the evacuation of an abscess in the posterior mediastinum, which was pressing on the heart and bronchi. This case was also completely successful.

Another similar and striking illustrative case is reported by Southam (*Brit. Med. Journ.*, 1892, i. 655), in a child three and a half years old, all four extremities being so paralyzed that the patient lay helpless in bed, with incontinence of both urine and feces. In this case, at two operations three months apart, he removed the laminæ from the fourth cervical to the first dorsal vertebra inclusive, and removed a quantity of granulation tissue. But little improvement was noticed for nine months after the second operation; then—a most important point of encouragement—the child began to improve, and when the case was reported two years later could walk without assistance and had control over the sphincters.

The source of the nervous symptoms seems not generally to be the mere curvature of the spine, nor the acute myelitis, but the pressure caused either by fungous masses of granulation tissue over the bodies of the vertebræ by inflammatory swelling, but oftenest by a chronic pachymeningitis, or by the accumulation of pus. For instance, W. Arbuthnot Lane (*Lancet*, 1891, ii. 989) reports eleven cases of Pott's disease in which the compression in all but one was caused by an abscess. In none of these were there any fibrous neoplasms, such as are described by Macewen. In such cases death follows either as the result of pulmonary complications, or more frequently from cystitis and renal complications, bed-sores, pain, sleeplessness, etc. In all of Lane's cases the large amount of disease would have precluded a cure

by ankylosis. He urges, therefore, that "every case of paraplegia due to spinal caries should be operated on with as little delay as possible." In view, however, of published clinical results, especially as shown by Lloyd (*Annals of Surgery*, October, 1892, 289), who has tabulated seventy-five cases of laminectomy for Pott's disease, this opinion seems too sweeping if taken without reservation. Thus, Meyers has reported recovery from paraplegia in fifty-five per cent. of two hundred and eighteen cases, Gibney fifty per cent. in fifty-eight cases, Taylor and Lovett ninety per cent. in nineteen cases, and Sayre ninety per cent. in thirty-eight cases. The views of Burrell and Bullard and Kraske seem to be the more reasonable. "So long as we have reasonable or even moderate chances of recovery without operation," say the former authors, "we do not believe it advisable or justifiable, in the present condition of spinal surgery, to perform so serious an operation as the resection of the laminæ." Kraske's rule for interference is well expressed. "It is necessary before operating to have exhausted all other methods of treatment. I would say interfere when a paralysis of the bladder is established; this is the one symptom which is so serious as to justify everything" (Lloyd). To which Lloyd adds, that "the first sign of degeneration of the cord should indicate immediate operation." It will be especially observed that ordinary cases of mere curvature from Pott's disease are excluded, and only those in which paraplegia with all its dire evils has resulted from the caries should be considered suitable for operation, and then only with the limitations already stated. If there are other tubercular complications it is contraindicated.

It will be observed that the cases above referred to fall into two categories: First, the cases of paraplegia from pressure, either by masses of granulation tissue which may arise from the vertebræ within the spinal canal or from thickening from pachymeningitis,—a thickening which, for instance, in Macewen's case, amounted practically to a tumor so far as pressure on the cord is concerned; secondly, cases of paraplegia as a result of pressure on the cord from abscesses resulting from the breaking down of the granulation tissue. Cases of paraplegia from either of these lesions may be treated by laminectomy, with removal of the neoplasm, the granulation tissue, the pus, the carious bone, etc., by the usual means employed in such cases, provided they fulfil the conditions already mentioned.

Besides these there are many cases of ab-



scasses in Pott's disease in which modern surgery has of late achieved notable improvements in the way of preventing the later lesions of the cord, which may properly be briefly alluded to. Until within a few years surgical interference has been limited to evacuation and drainage of these abscesses at their lowest point,—e.g., at the thigh below Poupert's ligament,—with or without curetting or injection of iodoform in ether or an emulsion of iodoform in olive oil. This left the source of the evil—the carious vertebræ—untouched and also very imperfectly treated the abscess. Mr. Treves, in June, 1884 (*Med.-Chir. Trans.*, vol. lxxvii.), urged the evacuation of psoas abscess in the loin, combined with the removal of the carious and necrosed bone by the usual means employed elsewhere.

This method he has perfected and extended, and at the present time carries it out as follows, which I condense from his "Manual of Operative Surgery" (ii. 731): A vertical incision two and a half inches long is made in the loin, whether it be in lumbar or psoas abscess, in order to reach the spine itself rather than merely to drain the abscess at its lowest point. The centre of this incision is midway between the crest of the ilium and the last rib. It is about two and a half inches from the lumbar spines. The lumbar aponeurosis and the attached muscular fibres of the latissimus dorsi are divided the entire length of the incision, thus exposing the erector spinæ, which is drawn strongly towards the middle line, exposing the middle layer of the lumbar fascia. Through this can readily be felt the transverse process of the third lumbar vertebra. A vertical incision, as near the transverse processes as is convenient, exposes the quadratus lumborum, which here is very thin. The quadratus is divided close to the extremity of the transverse processes, and the incision cautiously enlarged until the muscle is divided to the full extent of the external wound. The abdominal branches of the lumbar arteries may easily be wounded, but care should be exercised to avoid them, as well as the main trunks of the lumbar vessels, by keeping close to the transverse processes and reaching the spine by following them.

The inner edge of the quadratus is overlapped by the psoas muscle, and on dividing the quadratus the psoas is therefore exposed. As the fibres of the two muscles run almost parallel, it is important to observe that the interval between them can be recognized by a thin but distinct layer of fascia, known as the anterior layer of the lumbar fascia. Next, the tendinous fibres of the psoas arising from the

transverse processes having been divided, the finger is introduced beneath the muscle until it reaches the anterior aspect of the bodies of the vertebræ, when the incision can then be enlarged as far as is necessary. All risk of wounding the peritoneum will be avoided by making the incision in the quadratus as near the transverse processes as possible.

When the abscess cavity is well opened, the anterior surface of the spine is examined by the finger. An irrigator is then introduced into the abscess, and it is flushed by many gallons of sublimate solution (1 to 5000). While this is being done, the position of the patient is repeatedly changed, so as to fill and again empty the abscess cavity many times. During the washing out, the finger is introduced into every accessible portion of the abscess, diverticula are opened by it, collections of caseous matter are scraped away with the finger-nail, and in general all the tubercular granulation tissue got rid of as far as possible. The sharp spoon can be used, but, should be used with caution, especially on the anterior wall, which is thin. Mr. Treves thinks a piece of fine Turkish sponge on a long sponge-holder is the best means of removing the granulation tissue, by wiping and scrubbing the inner wall with a rotary movement of the sponge in every part of the abscess and its diverticula. I have found the ordinary gauze sponges equally good; but to accomplish the object in view much time, many sponges, and prolonged and thorough scrubbing, rubbing, and wiping of the interior of the abscess are necessary. When the sponge or gauze is drawn out practically unsoiled, then the cavity can be regarded as prepared for healing. During this process, or as a separate stage, thorough flushing out is again accomplished. Finally, the abscess is wiped dry and the wound closed by a series of silkworm-gut sutures, including the muscular and tendinous structures. Then the ordinary antiseptic dressing is placed over the wound, and I also prefer to place a large abdominal pad over the site of the abscess anteriorly, so as to assist in obliterating the cavity by pressure. "The subsequent treatment," in the words of Mr. Treves, "consists in absolute rest in the recumbent position for a period of months,—a period which may easily be too short, but can hardly be too long." In adults it will probably be over a year; in children somewhat less. If it can be spent in the best hygienic conditions, out of doors, at the sea-side, etc., so much the better.

A second similar operation may be needed, but Mr. Treves states that on no occasion has he had to do a third operation.

Sometimes Mr. Barker's hollow-handled flushing gouge or sharp spoon, which answers so well for bone, can be used also in these abscesses, but must be used with caution.

In the cervical region retro-pharyngeal abscesses are usually accessible through the mouth, and the bone can also be treated by the same route. Burckhardt (*Centralbl. f. Chir.*, 1888, No. 4) has advocated an external incision at the inner border of the sterno-cleido mastoid, reaching the abscess by the inner side of the sheath of the vessels. Chiene, as early as 1877, advocated a similar operation on the outer border of the sterno-cleido mastoid, and Kramér (*Centralbl. f. Chir.*, 1892, No. 12) has successfully carried out Burckhardt's proposed operation with ease. These operations have the advantage, of course, of permitting more thorough antisepsis than the oral route, but the mortality of the latter has been very small. In abscesses in the cervical region, with difficulty accessible by the mouth, however, these methods of operating will probably prove of greater value than that by the mouth.

In the dorsal region, Shafer (*Journal of the American Medical Association*, December 19, 1891, 943) proposed "to incise the soft tissues one inch from the spinous processes, uncover and remove the transverse process of the diseased bone or of the one just below it, and resect the head and neck of the corresponding rib. This permits a large finger to reach the posterolateral angle of the diseased bone, and gives room for the introduction of the curette, sharp spoon, or forceps, and leaves a large space for a drainage-tube. Should it be desired to carry the drainage-tube through the column, the transverse process with the end of the rib of the opposite side can also be removed, when it can readily be passed through."

A somewhat similar method was published four months later by Vincent (*Rev. de Chir.*, April, 1892, 273). In this somewhat elaborate paper he describes three different methods of side-to-side drainage: (1) prevertebral drainage,—that is, in front of the bodies of the vertebrae; (2) premedullary drainage,—that is, in front of the spinal cord and its membranes, in case of the destruction of the bodies; and (3) vertebral trans-somatic drainage, or drainage through the bodies of the vertebrae. In all cases he selects the point of greatest curvature, makes an incision along the external border of the erector spinæ eight to ten centimetres in length, with a transverse incision from the middle of the first and at right angles to it, about five centimetres long. One or two ribs are resected, the intercostal muscles separated, the

pleura and the tissues in the chest are detached by the finger or any blunt instrument, and, following the track of the granulation tissue and the sinuses, we are able finally to pass the drainage-tube from side to side. The method is not essentially different, whether the tube is passed in front of the bodies of the vertebrae or behind them and just in front of the medulla and its membranes. In the latter case great care should be taken not to puncture or otherwise injure the membranes or the cord itself. Only widespread destruction of the bodies of the vertebrae would allow of premedullary drainage.

In vertebral trans-somatic drainage, the earlier steps are precisely the same as before, with the addition that, by means of the curette or perforator or other such instrument, the body of the vertebra is perforated from each side and the drainage-tube carried through the canal so made.

Shafer reports three cases, in one of which the sinuses, excepting one, all healed in two months and in six months after the operation the patient left the hospital, but a year after the operation she died of pulmonary tuberculosis. In the second case, in which the same procedure was used in the cervical region, there was very serious hemorrhage (checked by packing) in the cavity of the body of the fourth cervical, and the disturbance of the vertebral column was such that her neck felt as though it were broken. A jury-mast enabled her to walk about, and she was discharged from the hospital six weeks after the operation. About six months later (the time is indefinite) the jury-mast was laid aside, she could hold her head erect, was engaged about the house and feeling well. In the third case there was caries of the body of the sacrum, with secondary inflammation of the trochanter major. The patient was somewhat more comfortable after the operation, although the prognosis as to his lungs was very bad.

Vincent reports two cases,—one of trans-somato-vertebral drainage and the other of prevertebral drainage. The first made an excellent recovery; the second died.

The conclusion that I should reach as to this somewhat heroic method is very much that of Vincent: "We cannot as yet come to a conclusion in favor of such operative procedures in Pott's disease. All we can say actually is that they have been practised without accident" (?)—and with varying results. The procedure will only be occasionally useful, and great care must be taken to avoid wounding the pleura, the ganglia of the sympathetic, and the spinal nerves. The intercostal arteries are almost in-

evitably injured, and it seems possible that even the vertebral was involved in one of Shafer's cases.

*THE VALUE OF THE COLD BATH IN  
THE TREATMENT OF ASTHENIC  
DISEASES OTHER THAN  
TYPHOID FEVER.*

BRING THE OPENING OF THE DISCUSSION ON THIS SUBJECT  
BEFORE THE SECTION ON THERAPEUTICS OF THE  
PAN-AMERICAN MEDICAL CONGRESS.

BY SIMON BARUCH, M.D.

THE very fact that this subject has been chosen for discussion is a happy augury for rational therapeutics. When I have hitherto referred to the cold bath as a method of treatment for an asthenic disease I have almost invariably been met with the query, "Would not the shock be too depressing to the patient?" The question for discussion here is an evidence of an awakening to the value of the best remedy for asthenic conditions which we have. Instead of defining asthenia, let us take as an example the most typical form we meet, one a temporary, the other a more enduring condition. Surely a woman who has fallen in syncope presents the most complete picture of asthenia. Her pulse is feeble or absent, her respiration is shallow, sensation and motion are practically abolished, the patient's vital powers lie dormant, as it were. What is the treatment which usage has so sanctioned that even lay people constantly resort to it? The application of cold water to the periphery—the face or chest—is the remedy. You are all familiar with the result; the merest tyro in medicine can give its rationale. There is a reflex stimulus to the nerve-centres, a deep inspiration ensues, the wheels of life again are set in motion, color returns to the pallid cheek, the glazed eye brightens, the pulse beats again. The asthenic condition is removed as no other agent can remove it.

Let us take a more frequent asthenic condition. A patient suffering from an infectious disease lies prostrate, with thready pulse, shallow breathing, dull eye, picking at the bed-clothes, subsultus, involuntary defecation. All these remind us that here we have the very climax of asthenia. What shall we do? Will digitalis and strophanthus arouse a heart whose response depends upon these obtunded nerve-centres? Strychnine gives us some, because it stimulates the nerve-centres. But seat such a patient in a shallow warm bath, and pour with some force one or two basins at 75° F. or less over his head and shoulders; rub him gently;

repeat if indicated. The result will astonish those who have not tried it. There is a gasp for breath, the dull eye resumes its lustre, the facial cyanosis yields to a better hue, the pulse becomes slower and less compressible. The wheels of life are again set in motion; not, as in the case of syncope, to remain so, but to again be overbalanced by the toxic blood which supplies the nerve-centres. Again and again this affusion must be repeated. Fear not the so-called shock, for this is just what you want to evoke; it is, when judiciously administered, followed by reaction, and reaction is the great stimulus, greater than all medicinal agents or alcoholic stimulants. These are clinical facts, observations made at the bedside; they are at least as valuable as those made on medicinal agents.

In low forms of scarlatina, when the feeble, rapid, thready pulse and cyanotic appearance of the skin present every feature of asthenia, several dips of the patient into water at 60° to 75° F., followed or accompanied by friction, arouses the feebly-acting heart more quickly and reliably than all other known stimulants.

What is the rationale of the action of cold water in these typical cases of asthenia? Heart-failure stands like a spectre at the bedside, and the physician often labors in vain to banish it. Heart-failure kills; heart-failure is the culmination of asthenia. How does the application of cold to the periphery restore vigor to the drooping heart? Macy, Traube, and others have shown that in these asthenic conditions we have a loss of tone in the smaller vessels, a paresis of the muscular coat and of the elastic tissue which acts the part of muscular coat in the peripheral capillaries. Now, it is a well-known physiological fact that the circulation of the blood depends not only upon the vigorous healthful action of the heart, but also upon the integrity of the arteries and capillaries by whose elastic resiliency the blood is propelled through the finest tubes. Surely the propulsion of a viscid fluid like blood through such fine tubes would be impossible unless the latter were endowed with propulsive power. What results when the latter is lost or in abeyance? The heart must increase its force to overcome an obstruction at points where it formerly received aid. It is pumping against paralyzed vessels; the blood stagnates in the smaller ones, giving rise to hypostatic congestion, and thus is the difficulty increased. No wonder that the heart labors harder, that the pulse-rate increases and its tension is lowered. No wonder that its ganglionic forces are exhausted and that the heart yields at last to the dread pressure upon

its vital forces, which are sapped besides by the toxic blood supplying it. Apply a judicious hydrotherapeutic procedure in such a case; let it be cold affusion, dip, spray, ablution, a bath, but let it be adapted to the case and always accompanied by friction. What is the result? There is a local stimulus to the coats of the superficial vessels; they contract again under the impact of repeated cold wave followed by friction. Their paresis is removed; they again propel the blood as was their wont. The dam is cut, as it were; the blood again flows freely through the terminal vessels; the heart responds to the relief afforded by a slower and more deliberate contraction; we have normal tension and absence of diastolic. At the same time the central nervous system is bathed by cooler blood, blood which is better oxygenated, and thus the cardiac ganglionic centre receives new life at one end, while at the other the labor of propelling the blood is removed. If any one doubts this rationale, let him see the deadly pale skin (except the dusky face) of advanced typhoid redden under this procedure and come out glowing with the roseate hues of health, and he will be convinced; let him see the marbled skin of a low scarlatina brighten up under the friction and bathing and resume its color, and he will no longer doubt. In chronic conditions phthisis offers a good illustration of the effect of hydrotherapy in removing the obvious asthenic conditions.

We have the testimony of Ziemssen, who refers to it as "a remedy of extraordinary value." Indeed, clinical demonstration of the "value of the cold bath in asthenic conditions" is abundant. The Montefiore Home for Incurables receives its supply of patients from other hospitals which decline to retain them on account of their incurability and protracted nature. Here I have had an opportunity of testing this question in a satisfactory manner in cases of phthisis, Bright's disease, diabetes, and a variety of functional and organic nervous diseases which make the institution the Salpêtrière of America. The gradual education of the reactive capacity in these desperate cases and the improvement of the nutrition in many of them offer interesting illustrations of what may be accomplished by the methodical application of water. The annual reports of the institution furnish the details, with which I need not burden you here. I will cite only two cases from private practice that may be of interest. A young man from Kentucky, who had been pronounced phthisical (right apex, first stage) by Dr. Janeway, whose sputum had been referred to the Van-

derbilt Clinic Laboratory to culture bacilli without appetite, emaciating for six months, was treated at the Hydratic Institute from August, 1892, to January, 1893, with the result of sixteen pounds' gain, complete removal of bacilli (examined at the Vanderbilt Laboratory by Dr. Van Giesen seven times). He remained well. His brother is now under treatment for the same (more advanced) trouble, and has gained four pounds in three weeks. A middle-aged lady, who had cervix and perineum operated on by Dr. Ralph Waldo, and who had been bedridden for two years, was advised by Dr. Charles Carroll Lee, called in consultation by Dr. Waldo, to place herself under hydratic treatment. She was carried into the institute by her husband and brother, presenting every manifestation of pronounced neurasthenia of the melancholic type. Her reactive capacity was feeble, but it was gradually raised, until after six months' treatment she asked to be allowed to use a bicycle, so active and strong had she become. She is now in good health.

With these brief histories I may conclude my commendation of the "cold bath in asthenic conditions," acute or chronic.

*THE CLASSES OF INVALIDS MOST BENEFITED AT ATLANTIC CITY.*

READ BEFORE THE CONGRESS OF MEDICO-CLIMATOLOGY IN CHICAGO, JUNE 3, 1893.

BY BOARDMAN REED, M.D., ATLANTIC CITY, N. J.

**N**ERVE exhaustion, or, in popular parlance, nervous prostration, is, in its various forms, the disease most certain to be benefited at Atlantic City. Probably a prolonged sea-voyage or a sojourn at some of the other sea-shore resorts might be equally helpful. I cannot say as to this, but confine myself to a report of facts carefully observed during a residence of more than fifteen years.

Sea air, as exemplified at Atlantic City, is a nerve tonic of the utmost value. Whether the unfortunate victim of an overtaxed nervous system chances to arrive in a rain which confines him to his hotel (as will sometimes happen, especially in the winter or spring), or whether he finds all sunshine and brightness, he—or more often it is she, since the majority of neurasthenics are women—will nearly always begin at once to eat and sleep better. Fine weather, though helpful, is not essential, and most cases will gain even in spite of it. With quickened appetite and sounder sleep come an enriched blood and refreshed nerve-centres.



All vital processes are heightened, and health is usually and often rapidly restored.

True, there are exceptions. Occasionally a nervously-depressed patient, who considers himself merely run down from overwork or other cause, comes to Atlantic City, puts up at one of the best hotels, and sets out to get well by doing as he sees others do, yet fails utterly, returning home after one or two weeks worse, perhaps, than before. There are usually excellent reasons for these failures. One of the most common is the existence of derangements of the stomach or liver, which are suffered to go without proper treatment. Sea air is simply a tonic, —a powerful and effective one in most cases, but still only a tonic and not a corrective of faulty secretions. The patient who has been trying to overcome an increasing debility by forcing larger quantities of food—often, very unsuitable food at that—upon an unwilling, because unhealthy, stomach, with the help, perhaps, of an unaccustomed amount of stimulants, until his tongue has become foul and his entire digestive apparatus on the point of revolting, will not recover by the mere fact of sojourning at any sea-side place. If he has gone on in this way until his urine has become loaded with urates, his joints stiffened, his temper moody and despondent, and his sleep considerably impaired, the sea air, though a most valuable aid in the task of curing, will do next to nothing until the way has been cleared for its proper action by a judicious course of medical treatment instituted either by the physician at home or by some competent local practitioner at the shore after the patient has arrived there. Fortunate is it for the poor neurasthenic if he or she has not let matters drift along until insomnia has developed into a chronic condition and the habit of taking some narcotic drug has become fixed. These are the cases which try the souls of physicians everywhere; but even these will do well and usually recover at Atlantic City, if placed under proper conditions, and especially if they can have the benefit of the Weir Mitchell "rest-cure" (or some modification of it in the less severe cases), under the guidance of a physician and nurse experienced in such special treatment.

Closely allied to neurasthenia is simple atonic dyspepsia, and this rarely fails to respond to the healthy stimulus of the sea air, especially when the diet and exercise have been properly regulated. In the worst cases the aid of medicine, as well as of electricity and massage, is sometimes necessary, but many recover with only the simplest hygienic treatment.

Convalescents from operations, as well as

from fevers or other acute prostrating diseases, will also derive the greatest benefit in nearly all cases from a removal to Atlantic City. Like the nervous cases, these may be expected to gain rapidly even if still confined to their rooms. It is a constant experience to see them taking on flesh and growing stronger at a surprising rate even before it is possible to get them out of doors.

The chronic diseases peculiar to women are generally improved and often markedly so by the invigorating properties of the climate. It tends to bring up the nutrition and nerve tone, thus indirectly relieving congestion and catarrhal states of the pelvic organs. Many of the diseases of childhood are promptly and often remarkably benefited. Persistent cases of summer complaint, as well as nearly every form of malnutrition in children, including especially scrofula, rickets, chronic joint-disease, and chronic bronchitis, find in the atmosphere of the locality a positive and decided adjuvant to other therapeutic resources. In some of these cases the air alone proves rapidly curative without further medical intervention.

In adults, as well as children, chronic bronchitis, chronic pleurisy, and delayed resolution of pneumonic exudations may usually be expected to do well at the same place. In most of such cases it is advisable to persist at the same time with the usual therapeutic measures in order to insure the promptest results.

Anæmia, chlorosis, and struma are benefited by sea air, and, under proper regulations and restrictions, even more markedly so by sea-bathing. But it is highly important to see to it that patients afflicted with these or other maladies shall exercise caution as to the length and frequency of their baths. For some only the very briefest dip in the ocean will be needed to obtain the curative effect or can be safely borne; others should be prohibited altogether from ocean-bathing. At least equal care is needed as to the manner in which the warm or hot sea-water baths are taken. Patients are prone to look upon these as entirely safe for anybody at all times, and to suit their own inclinations as to the temperature of the water and the length of time they remain in it; but no experienced physician need be told that delicate invalids cannot all bear safely a prolonged soak in hot water, whether salt or fresh.

The above-mentioned diseases form only a small part of the many which are benefited by the climate of Atlantic City, but they include those in which I have observed the most marked and constant improvement. Sufferers from asthma and from hay-fever often have an

entire immunity here, but this is by no means always the case. Patients in the early stages of pulmonary phthisis usually do exceedingly well,—quite as well, according to my experience, as they do in the lowlands of the South,—always provided they persist with a rational treatment and can and will spend most of their time out of doors in the open air.

Chronic malarial cases may be cured by a long sojourn at Atlantic City. There is no doubt whatever as to the entire exemption of the place from malaria in the proper sense of that word,—i.e., the miasm which producesague or intermittent fever. The town has an excellent underground sewerage system,—one of the best on the coast,—and is supplied with an abundance of pure and wholesome drinking-water, so that invalids need not incur the dangers which lurk so often in resorts where the sanitation is bad.

## ACTIONS OF DRUGS UPON THE KIDNEY.

ABSTRACT OF TWO LECTURES ON DIURETICS.

By W. C. CAMPBELL,

Professor of Materia Medica and Director of the Pharmacological Laboratory, College of Physicians and Surgeons, Chicago.

GENTLEMEN:—To-day I begin a consideration of a class of drugs called diuretics. These drugs, when given in medicinal doses, increase the activity of the kidneys, increase the secretion of the urine. They not only act upon the kidneys, but also on other organs, and for convenience I will speak first of their action as diuretics, and then afterwards consider each drug separately, giving its composition, pharmaceutical preparations, and other actions. I shall not be content with simply telling you that these drugs increase the flow of urine, but will also, as far as is known, try to explain their mode of action, the different points in the renal mechanism where they act to increase diuresis. While it is true that a large number of pharmacological experiments have been made on the kidney, yet there is comparatively little known about how drugs act on it,—far less than there is about the action of drugs on the motor, respiratory, circulatory, and digestive mechanisms. At present there are many points unsettled, many experiments conflicting, so something I may say later research may prove to be different.

To make myself better understood, I will present the subject in the following order:

1. The action of drugs on the secretion of urine in health.

2. The action of drugs on the reaction of the urine in health.

3. The action of drugs on the composition of the urine in health.

4. The action of drugs on the secretion, reaction, and composition of the urine in disease.

### ON SECRETION OF URINE IN HEALTH.

Before the student can understand the various ways that diuretics act, the various points that the different drugs stimulate or depress to increase the secretion of urine, he must first learn the parts of mechanism and their function; hence I will briefly describe,—

1. The anatomy of the renal mechanism.
2. The physiology of the renal mechanism.
3. The pharmacology of the renal mechanism.

#### *The Anatomy of the Renal Mechanism.*

This mechanism consists of thousands of peculiar glandular structures bound together, and known collectively as the kidney. A complicated nervous mechanism presides over their functional activity. The glandular mechanism as shown in the simple schematic drawing No. 1, where, for simplicity, only one of these structures is represented, is composed of the following five structures: glomeruli, convoluted tubules, constricted tubules, unstriated muscles, and blood-vessels.

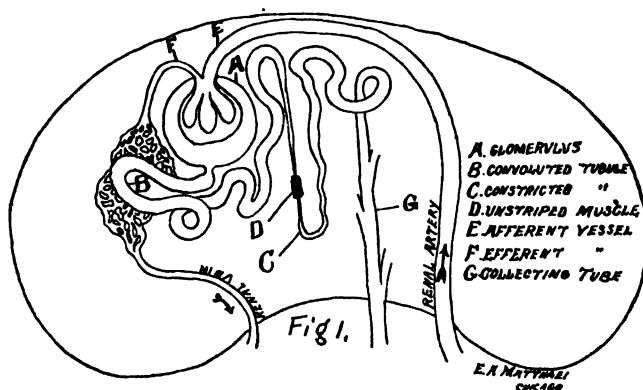
1. *The Glomeruli.*—These are situated in the cortex of the kidney, and each consists of a plexus of capillary vessels pushed into the closed capsule, which capsule is the dilated end of the corresponding convoluted tubule. Hence, as shown in Diagram 2, the capsule of the glomerulus consists of two layers, the cavity between which opens into the convoluted tubule. Also notice that the layer covering the capillary plexus is made of cubical cells, while the external layer is formed of flattened cells. This has, as will appear later, an important bearing on the function of the glomerulus.

2. *The Convoluted Tubules.*—These tubules, as shown in Diagram 1, arise from the capsule and pursue a tortuous course, and end in the constricted loops to be described next. They are lined with a single layer of nucleated polyhedral epithelium, as shown in Diagram 3.

3. *The Constricted Tubules.*—These tubules, as seen in Diagrams 1 and 3, are situated in the medullary portion of the kidney, have a much smaller lumen than the convoluted tubules, and are lined with a single layer of flattened epithelium. Notice the difference in the cells of these two different kinds of tubules.

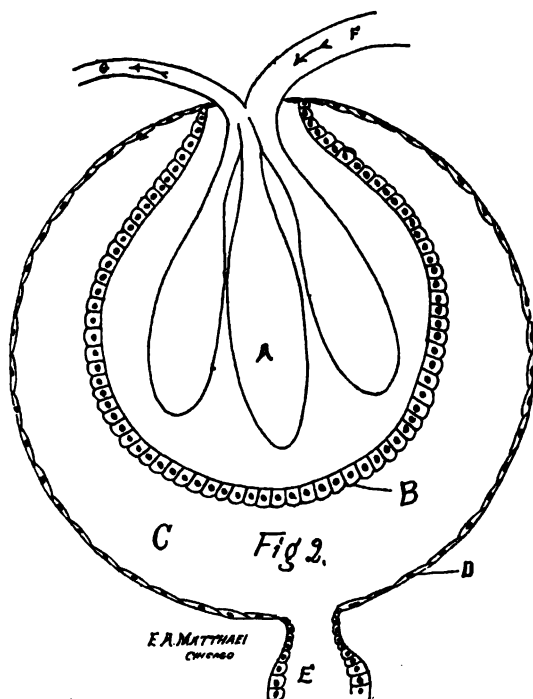
4. *The Unstriated Muscles.*—As shown in Diagram 1, there are unstriated muscle-fibres

ism probably, as shown in Diagram 5, consists of,—



around the constricted loops. Also, in Diagram 4, copied from Kostjurin, they are shown as they appear under the microscope. These

1. Four centres in the medulla oblongata,—the vaso-constrictor, vaso-dilator, secretory, and inhibitory secretory.



fibres are found throughout the kidney, but the only ones that at this place concern us are those around these loops.

5. *The Blood-Vessels.*—As seen in Diagram 1, the afferent vessels convey the blood to the glomeruli; then it passes out by the efferent vessels, and is carried by them to the convoluted tubules. The blood passes through the glomeruli first, then to the tubules. There is an insignificant portion that does not pass through the glomeruli. The nervous mechan-

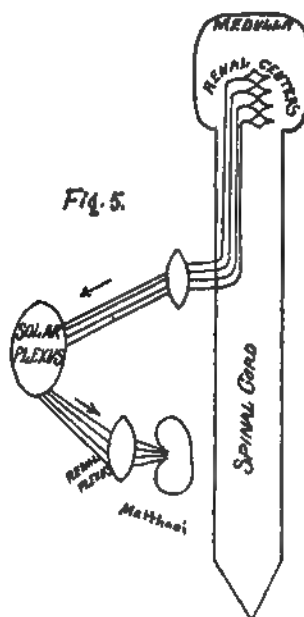
2. Four sets of fibres passing respectively from these centres by way of the solar and renal plexuses to the kidney.

These nerves, after reaching the kidney, pass to the structures suggested by their names. The vaso-constrictor and vaso-dilator enter the vessel walls. Berkley has shown that they do not enter the capsule and pass to the capillary plexus of the glomerulus. The secretory nerves pass between the epithelial cells of the convoluted tubules. As yet no nerves have been found supplying

the cubical epithelium over the capillary plexus. The recent researches of Berkley in the Patho-

retrograde products, such as urea. In the evolution of these structures the glomerulus was placed above the convoluted tubule, very likely so that the water could wash the urea out of the tubules into the pelvis of the kidney.

logical Laboratory of Johns Hopkins Hospital have shown the terminations of the renal nerves



COPIED FROM A SKETCH OF  
PROP. S. D. KOSTJURIN  
MATTHESI Fig. 4.

as stated above. However, it must not be forgotten that a number of experimenters deny the existence of secretory nerves for the kidney.

#### *The Physiology of the Renal Mechanism.*

The functions of the different parts of the renal mechanism may be briefly stated as follows:

1. The glomeruli excrete water and mineral salts and also certain pathological substances and some foreign materials that have been introduced into the circulation. As the blood circulates through the capillary plexus of the glomerulus, these substances *osmose*, not filtrate, into the capsule cavity, and then pass on into the convoluted tubules. The cubical epithelium, as shown in Diagram 2, excretes these substances by an exosmotic action.

2. The glandular epithelium of the convoluted tubules excretes some water, but mainly the

3. The constricted tubules regulate the amount of urine by their constrictions delaying its exit and permitting some of the water to be reabsorbed. It is probable that the contraction of the unstriated muscle-fibres around the tubules can not only hasten the expulsion of urine by their peristalsis, but also that under certain circumstances they may lessen or increase the size of the constricted loops and affect the quantity of water passing outward.

4. The nervous mechanism regulates the functional activity of the kidney by controlling the blood-supply to the gland, by regulating the activity of the secreting cells, and possibly by acting upon the unstriated muscles around the tubules. It is very probable that these unstriated muscles are supplied with nerves. No experiments have been made with regard to whether drugs acting upon unstriated muscles can in this way affect diuresis.

#### *The Pharmacology of the Renal Mechanism.*

In presenting this I will,—

1. Enumerate the various points where a drug may act;
2. Describe the possible ways in which drugs may increase the secretion; and,
3. Give the experimental methods of determining the points where a drug acts to increase the secretion of urine.



### I. The Various Points in Mechanism.

The conceivable points in the mechanism where drugs may act to increase the secretion of urine, as seen in Diagram 5, are,—

1. The four centres in the medulla oblongata.
2. The solar or renal plexus.
3. The ends of the various nerves in the kidney.
4. The muscle of the vessel wall.
5. The renal glandular cells. Or, putting this more in detail, remember that,—
  1. Stimulation of the vaso-constrictor centre will contract renal vessels and diminish secretion.
  2. Depression of the vaso-constrictor centre will dilate renal vessels and increase secretion.
  3. Stimulation of the vaso-dilator centre will dilate renal vessels and increase secretion.
  4. Depression of the vaso-dilator centre will contract vessels and diminish secretion.
  5. Stimulation of the secretory centre will increase glandular activity and the secretion.
  6. Depression of the secretory centre will diminish glandular activity and the secretion.
  7. Stimulation of the inhibitory secretory centre will diminish glandular activity and secretion.
  8. Depression of the inhibitory secretory centre will increase glandular activity and secretion.

The same eight propositions can be formulated for the ends of the nerves as for the centres.

9. Direct stimulation of the arteriole wall in the renal vessels will contract the arteries and lessen secretion.
10. Direct depression of the arteriole wall in the renal vessels will dilate the arteries and increase secretion.
11. Direct stimulation of the glandular cells will increase secretion.
12. Direct depression of the glandular cells will lessen secretion.

### II. Possible Ways in which Drugs may act.

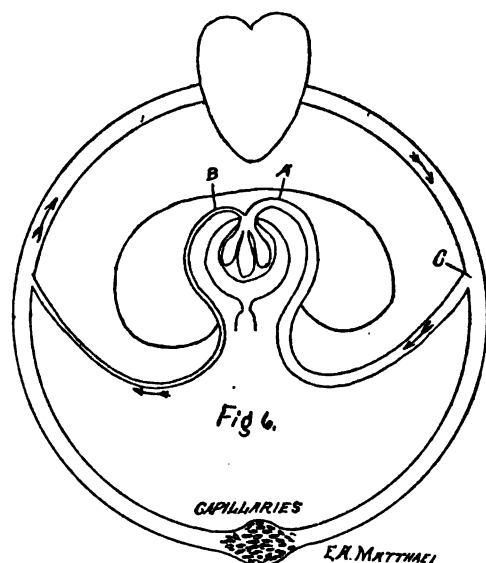
There are just three ways by which the secretion of urine may be increased:

1. By increasing the renal blood-pressure and circulation.
2. By increasing glandular activity in other ways than through blood-supply.
3. By lessening reabsorption from the constricted loops.

#### Action on Circulation.

I will speak of the glomerular circulation first, and then afterwards of that of the convo-

luted tubules. Because the glomeruli are specially constructed for the secretion of water, and the convoluted tubules for the secretion of retrograde products, the *circulatory apparatus* in the glomerulus is the higher developed, while the *secretory cells* in the convoluted tubule are the higher developed. Hence drugs, by acting on the circulation of the glomerulus, will affect its secretion far more than drugs acting on the circulation of the convoluted tubules will affect its secretion. For this reason much more must be said about the action of drugs on the circulation of the glomerulus than upon the circulation of the convoluted tubule.



The glomerular circulation and blood-pressure may be increased, as shown in Diagram 6, in three ways: (a) by dilating the afferent vessels, (b) by contracting the efferent vessels, and (c) by raising the general blood-pressure.

It is conceivable that the afferent vessels may be dilated,—

1. By stimulating the vaso-dilator apparatus.
2. By depressing the vaso-constrictor apparatus.

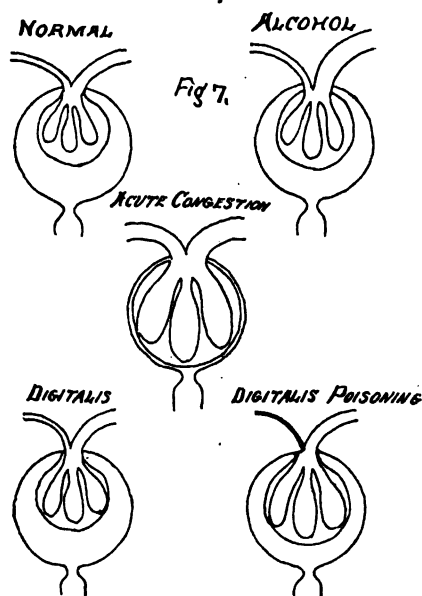
This action may be in the medulla oblongata, or solar or renal plexus, or on the ends of the nerves distributed to these vessels. In one or more of these ways the nitrites and alcohol (see Diagram 7) dilate the afferent vessels and increase the secretion of urine.

It is also conceivable that the efferent vessels may be contracted,—

1. By depressing the vaso-dilator apparatus.
2. By stimulating the vaso-constrictor apparatus.

This action also may be in the medulla oblongata, solar or renal plexus, or on the ends

of the nerves distributed to the efferent vessels. Numerous experiments appear to show that digitalis, squill, sparteine, convallaria, strychnine, and erythrophleum stimulate the vaso-constrictor centre in the medulla, causing the efferent vessels to contract, raising the blood-pressure 'in glomeruli, and increasing secretion of urine. This is seen in Diagram 7. Sehwald says that digitalis and strychnine also stimulate the ends of the vaso-constrictors. Broom, buchu, uva ursi, juniper, turpentine, copaiba, and cantharides are said to contract the efferent vessels, probably by stimulating the ends of the vaso-constrictor nerves in the vessel wall, and in that way act as diuretics. In conclusion, remember that while dilatation of the afferent vessels increases the secretion of urine, if the dilatation be excessive the secretion may be suppressed. When an excessive quantity of blood enters the capillaries of the glomerulus, the two layers of the capsule, as seen



in Diagram 7, become greatly distended and probably pressed closely together, so that there is no space for the urine to osmose into. This is what occurs in the ischuria of acute renal congestion. Again, while contracting the efferent vessels raises glomerular blood-pressure and increases secretion, yet, if it is excessive, the secretion will be lessened or even entirely suppressed, because the circulation in the glomerulus stops. This is the way, in digitalis-poisoning (see Diagram 7), the urine is suppressed.

The systemic blood-pressure may be increased,—

1. By increasing the pumping power of the heart.

2. By contracting the arterioles of the body. If at the same time the renal arterioles are contracted, this action diminishes secretion. Caffeine would be a stronger diuretic if at the same time it raises the blood-pressure it did not contract the renal arterioles. Such drugs as digitalis, strophanthus, squills, sparteine, convallaria, strychnine, and erythrophleum raise the systemic blood-pressure, which increases their action as diuretics. Those drugs that are diuretic by raising the systemic blood-pressure have, of course, far more marked action when the blood-pressure is below normal, as occurs in valvular heart-disease and debility.

3. By increasing the quantity of water in the blood-current. This is the way the secretion is increased after drinking large quantities of water. When the subcutaneous cellular tissue or serous sacs contain large amounts of water, as occurs in oedema and ascites, iodide of potassium, by causing it to re-enter the blood-current, may act as a strong diuretic, although it has no specially marked action on the kidneys. All that need be said about the circulation in the tubules is, that, as with any other gland, increasing its blood-supply increases secretion.

#### *Action on Secreting Cells.*

I will next speak of the ways in which the secreting cells may be stimulated. I will consider first the cells of the convoluted tubules, and then afterwards say something about the cubical cells of the glomeruli. It is conceivable that the secreting cells of the tubules may be stimulated,—

1. By the drug acting directly on the cells, possibly during its excretion from the body. No very elaborate experiments have been made on this subject. It may be in this way that the lithium, potassium, and sodium salts act. It is believed by some that calomel and other salts of mercury act in this way, and in proof of this they refer to the irritation, the cloudy swelling, of these cells in poisoning with mercury. They think that it increases renal activity just as it is supposed to stimulate the flow of saliva,—that is, during its elimination by the salivary and buccal glands. It might be remarked that Noel-Paton suggests that calomel acts as a diuretic by increasing the formation of urea in the liver, and that the urea acts as the diuretic. Lactose and glucose are believed to increase the secretion by acting directly on the secreting cells.

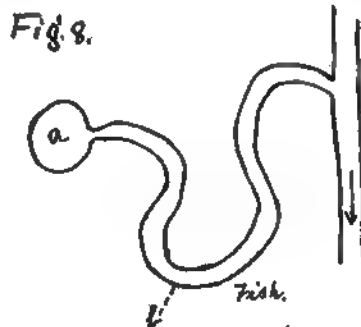
2. By stimulating the ends of the secretory nerves distributed to the cells. It may be that this is the way urea, diuretin, and one action

of caffeine excite secretion. However, some think they act directly on the cells.

3. By stimulating the secreting centre, or else the solar or renal plexus. If the recent researches of Cohnstein are correct, this is the way mercury, silver, and platinum act.

I will now say something about the action of drugs upon the cubical epithelium of the inner layer of the capsule of the glomerulus. What can

regulating the amount of water in the blood. Mammals and birds living in the air, and being subject to irregular removal of water by the skin and bowels and lack of regular supply to drink, need such a mechanism to regulate the removal of water in the urine. Hence mammals and birds have these long, constricted loops for that purpose, as shown in Diagram 8. But the fish which live in the water, and are



be said here is almost speculative, yet the physical chemical researches of Hoppe-Seyler on the osmotic relations of blood and urine, and the recent experimental research on rabbits and cats by Dreser in the Institute of Physiological Chemistry at Tübingen, throw new light upon the function of the cubical epithelium of the glomerulus and the action of drugs upon it. His experiments make it very probable that the cubical epithelium is an osmotic membrane. Increased blood-pressure in the glomerulus increases the outflow of water, not because it is a filtration, but because the pressure increases the capillary surface for the outward passage of the water, and especially because it *increases the circulation, and hence the blood is more rapidly changed* in the capillaries, so that the osmosis in this way is increased. Dreser concludes from his experiments that it is possible for drugs to act upon this osmotic membrane,—that is, the cubical epithelium,—and in that way increase the exosmosis from the blood. He thinks that caffeine and diuretin act this way. Of course, the effect would be the same whether they acted directly on the cells or on the ends of the secretory nerves distributed to them. But it must not be forgotten that no nerves have as yet been found inside the glomerulus.

#### *Action on Constricted Loops.*

The comparative anatomical researches of Hufner show that the constricted loops (Henle's loops) have the important function of causing the reabsorption of the water, as a means of

not subject to excessive loss of water, do not require any such regulating mechanism, and, as seen in diagram, they have no constricted loops. Dreser, from his experiments on rabbits, thinks that the first action in calomel diuresis is due to the mercury paralyzing these loops, so that reabsorption is lessened. He does not explain how it is supposed to act. He thinks that diuretics may yet be discovered that will not affect the glomeruli, but will act entirely by paralyzing these loops. The reabsorption of the water might be lessened by acting on the epithelium, so that it could not so easily or rapidly osmose back into the blood, or by dilating the constrictions so that the water could pass on more rapidly before there was time for its reabsorption. These might be dilated by relaxation of the unstriated muscles which, Kosturin has pointed out, surround these tubes.

No experiments whatever have been made to determine if drugs can act in this way as diuretics.

Again let me repeat that part that I have said may not be true, but it will serve its purpose if it suggests to you the importance of such knowledge,—the clinical value of knowing where a diuretic acts, and the possible lines for future research on the mode of action of diuretics.

#### *III. Methods of Experimental Research on the Actions of Drugs as Diuretics.*

I will next speak of the methods used for determining the points where a drug may act to

increase urinary secretion. It must be kept in mind that a drug may have more than one action, that it may act at more than one point in the renal mechanism, also that these actions may synergize,—that is, act together to increase diuresis,—or they may antagonize, one increasing while the other is diminishing the secretion. As an example of synergistic action may be mentioned alcohol, which raises the arterial pressure and also dilates the afferent vessels. Of antagonistic actions may be mentioned caffeine, which stimulates the convoluted tubules and increases secretion, but at the same time contracts the afferent vessels and proportionately lessens the secretion. In presenting these methods of research, since the subject is so complicated, I will, for simplicity, assume that the drugs have only one action upon the kidney.

The simplest and most common method used by experimenters is to find out, first, whether the drug acts by raising the arterial pressure. To do this all that is necessary is to introduce a manometer into the carotid artery, and record the blood-pressure before and after giving the drug. If the pressure is raised, it is concluded that the diuresis is probably due to increased blood-pressure; if it remains unchanged, then it probably acts on the secreting cells. This was the method used by Cohnstein in experimenting with diuretin on rabbits and cats. In diuretic doses the pulse and blood-pressure were unchanged; hence he thought it possible that the drug acted upon the secreting structures. But, as a means of giving you a general idea, rather than as a guide to experimental work, I will present this in a systematic manner. The order presented here will not always be practical to follow, but it will at least serve somewhat to give you an idea of how the actions of diuretics are learned. The experimenter may begin his work in several different ways. He may first decide whether the drug acts *inside* or *outside* of the kidney, or instead he may think it more convenient to determine first whether the drug acts on the *circulation* or on the *secreting cells*. I will very briefly outline both methods of procedure.

#### *First Order of Procedure.*

1. If the drug is a diuretic,—

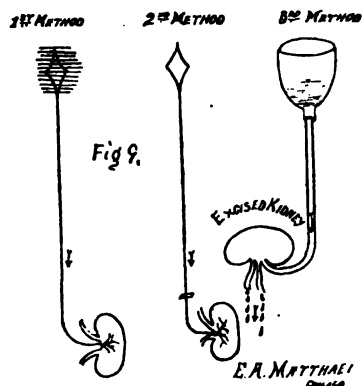
- (1) It acts on some structure within the kidney, or
- (2) It acts on some structure outside of the kidney.

In which of these ways it acts is determined as follows:

*Demonstration.—First Method.*—As shown in Diagram 9, completely paralyze the centres

in the medulla with some drug like chloral; then, of course, drugs cannot stimulate this centre to produce diuresis. Then secure canulas in the ureters to collect urine for measuring. Measure urine for a certain number of minutes, then give the diuretic; if the secretion is increased now, when the centres in the medulla are paralyzed, the drug acts on some structure in the kidney. It is usually best to inject the drug into a vein, as it acts much quicker. But do not lose sight of the fact that the drug may have more than one action, and the other may be in the medulla oblongata. Schröder and Lanngaard used this method to show that caffeine acted on some structure in the kidney.

If the drug does not increase the secretion when these centres are paralyzed, then it is because it does not act in the kidney, but its diuretic action is due to stimulation of the medulla oblongata. This is one of the ways Cohnstein used to determine the action of mercury, silver, and platinum. He says in the chloralized rabbit these drugs will not excite secretion; therefore he concludes that they act in the medulla oblongata. His experiments need confirmation.



*Second Method.*—As shown in Diagram 9, cut one renal nerve, then the corresponding kidney will be shut off from outside influence. Secure a canula in each ureter to measure the urine from each kidney. Measure rate of secretion from each kidney, and then give the diuretic. If the drug stimulates the isolated kidney, it is by acting in the kidney; if it does not, it is because its action as a diuretic is outside of the kidney. In this way Schröder and Lanngaard showed that caffeine acted within the kidney. Cohnstein also used this method to show that mercury, silver, and platinum do not act in the kidney. Other experimenters do not agree with him. If the drug increases secretion from both kidneys, but in a greater quantity from the intact kidney, it shows that the action is both within and without the kidney.

**Third Method.**—As shown in Diagram 9, the kidney is excised and placed in an apparatus (not shown or described here) specially constructed to keep up proper pressure, temperature, and artificial circulation of blood-and-salt solution through canula in renal artery. Munk devised this apparatus some years ago. Recently Jacoby and Sobieranski, in the Pharmacological Institute in Marburg, have constructed an instrument for carrying on artificial circulation in the kidney, which they call a *hamatisator*. After the kidney is placed in the apparatus and the circulation started, the rate of secretion of urine is next to be measured by taking it from canula in ureter; then add the drug to the liquid which is to pass through the kidney. If the secretion is increased, it shows that the drug acts in the kidney; if it is not increased, then it acts without the kidney. In this way it has been shown that chloride of sodium, nitrate of sodium, nitrate of potassium, caffeine, dextrose, cane-sugar, and glycerin stimulate secretion by acting within the kidney. Having now learned how to determine whether the action is in or outside the kidney, you will next study each of these.

2. If the drug acts inside the kidney to increase the secretion,—

- (1) It dilates the renal arterioles; or
- (2) It contracts the efferent vessels; or
- (3) It stimulates the secreting cells.

The next thing to do is to determine in which of these ways it acts.

**Demonstration.**—Secure canula in one renal vein, as seen in Diagram 10, and measure rate of outflow from vein before and after giving the diuretic. If the venous flow is increased by the drug, the secretion is due (a) to dilatation of the renal arterioles; if it is diminished, the secretion is due (b) to contraction of the efferent vessels; and if it remains unchanged, the secretion is due (c) to action upon the secreting cells.

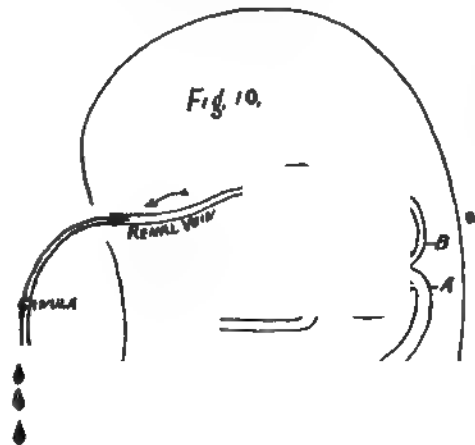
3. If the drug acts outside of the kidney to increase the secretion,—

- (1) It raises the general blood-pressure; or
- (2) It dilates the renal arterioles by acting in the medulla oblongata; or
- (3) It contracts the efferent vessels of the glomeruli by acting in the medulla; or
- (4) It stimulates the secretory cells by acting in the medulla oblongata.

The next thing is to determine in which of these four ways it acts.

**Demonstration.**—Introduce manometer in the carotid artery and canula in the ureter. Record blood-pressure before and after giving the diuretic. If the pressure is raised, then the drug

acts as a diuretic, at least in this way. If the systemic blood-pressure remains unchanged, then the diuresis is produced in one of the other ways. Cohnstein used this method to



determine whether calomel increased secretion by raising blood-pressure or by acting on one of the centres in the medulla oblongata. Having excluded systemic blood-pressure, you will next determine which of the centres in the medulla oblongata it acts upon. This action on the medulla causes either the afferent vessels to dilate, the efferent to contract, or the secreting cells to become more active.

**Demonstration.**—Which of these three it acts upon is determined as previously described.

#### *Second Order of Procedure.*

1. If the drug is a diuretic,—

- (1) It acts on the circulatory mechanism; or
- (2) It acts on the secretory mechanism.

The next thing is to determine on which of these two mechanisms the drug acts.

**Demonstration.**—Secure canula in one of the renal veins, and measure rate of flow before and after giving the drug. The outflow of blood can be measured by counting the drops, or, more accurately, by the graphic method,—that is, by an electric marker that will record each drop. If the venous outflow remains unchanged, the action is on secretory mechanism; but if it is increased or diminished, the action is on circulatory mechanism. Having now learned how to determine on which of the two mechanisms it acts, you will next consider each separately.

2. If the drug is a diuretic, because it stimulates the secretory mechanism,—

(1) It acts upon the centre in the medulla; or

(2) It acts in the kidney on the secreting cells or ends of nerves distributed to them.

*Demonstration.*—Isolate kidney in the three ways already described and give the drug.

3. If it is a diuretic by acting upon the circulatory mechanism,—

(1) It dilates the renal arterioles; or

(2) It contracts the efferent vessels; or

(3) It raises the systemic blood-pressure.

Next determine in which of these three ways it acts.

*Demonstration.*—Measure blood-pressure, and if not changed by the diuretic, then it acts in one of the other two ways. Measure rate of flow through renal vein; if the drug increases it, the arterioles are dilated; if it decreases it, the efferent vessels are contracted.

4. If it is a diuretic by dilating the renal arterioles,—

(1) It acts in the kidney to produce this dilatation; or

(2) It acts in the medulla oblongata (probably).

Next determine this.

*Demonstration.*—This may be determined in one of three ways,—by completely paralyzing the vaso-motor centres in the medulla oblongata, or by cutting the renal nerves, or by using the excised kidney. If in either of these three experiments the drug stimulates secretion, it is by acting in the kidney.

5. If the drug is a diuretic by contracting the efferent vessels,—

(1) It acts upon them in the kidney; or

(2) It acts upon the centre in the medulla.

*Demonstration* same as the last.

6. If the drug is a diuretic by raising the systemic blood-pressure,—

(1) It increases the pumping power of the heart; or

(2) It contracts the systemic arterioles.

*Demonstration.*—Secure canula in the peripheral end of femoral vein. Observe rate of out-flow before and after the drug is given. If the flow is lessened, the arterioles are contracted; if increased, the heart is stimulated; if unchanged, or very slightly, probably both the heart and arterioles are acted upon.

#### ON REACTION OF URINE IN HEALTH.

In health the acidity of the urine is due mainly to acid phosphate of sodium, or, if there has been an excessive meat diet, to acid phosphate of potassium. The acid phosphate is

formed from the basic phosphate during its exosmosis from the blood through the renal cells. This occurs because the nature of the epithelium is such that in health the acid is drawn through more rapidly than the base, and hence the decomposition and formation of the acid phosphate, of acid urine from alkaline blood. It is a well-recognized physical fact that osmotic force can cause chemical decomposition.

The reaction of the urine can be changed in two ways,—

1. By changing the reaction of the blood; and,

2. By affecting the activity of the renal mechanism.

#### *Action on Blood.*

Before speaking of how to change the reaction of the blood and in that way the reaction of the urine, I will say something about how the reaction of the urine is affected by that of the blood. Since the urine is formed from the blood, it is natural to suppose that the more alkali in the blood the more tendency there would be for it to appear in the urine, and this is the case. Normally, the renal epithelium is capable of converting the basic into acid salt; but if there is too much, then it no longer is capable of doing this, and hence the reaction of the urine may become alkaline.

The reaction of the blood may be changed by removing or adding acids to it and by removing or adding alkalies to it.

The blood may be made more alkaline,—

1. By adding alkalies to it. Hence the hydrates and carbonates of sodium, potassium, and lithium increase its alkalinity; also the vegetable salts of these alkalies, since in the blood they become oxidized into the carbonates.

2. By removing or preventing the normal entrance of acids into the blood. During digestion there is a large quantity of hydrochloric acid secreted in the stomach, the removal of which from the blood just so much alkalizes it, because the sodium with which it was combined as a neutral salt in the blood is now acting as an alkali. The precipitation and consequent prevention of the acids in the food being absorbed and entering the blood will increase the alkalinity of the blood. This is specially true of phosphoric acid, which forms insoluble salts with calcium and magnesium; hence if at meal-time lime or magnesia be given, it will precipitate and prevent the phosphoric acid of the food entering the blood, and of course will increase the alkalinity of the blood. Vegetable food increases the alkalinity of the blood in both these ways. It contains more sodium and potassium than animal food, and hence adds



more alkalies to the blood; it also contains more lime and magnesia, hence prevents the phosphoric acid entering the blood. This is the reason carnivora have acid and herbivora alkaline urine.

The blood may be made less alkaline,—

1. By adding acids to it. This occurs when large quantities of the mineral acids, except nitric, well diluted with water, are given; also, to a less extent, when the vegetable acids are taken. Salicylic, and especially benzoic, acids are about the only ones used for this purpose. There is nothing known about lessening the alkalinity of the blood by removing the alkalies from it, or by precipitating them in the digestive tract so that they will not enter the blood. But the alkalinity can be lessened by using a meat diet, which contains less alkalies.

#### *Action on Renal Mechanism.*

Just as it has been known for years that adding an alkali or acid to a solution changes its reaction, so it has been known that giving acids or alkalies will affect the reaction of the urine; but it is only recently that it has been learned that the reaction can be changed in an entirely different way,—that is, without any regard to the chemical law just mentioned. This action is not dependent on whether the drug is acid, alkaline, or neutral. When the diuresis is increased, when a large quantity of water is excreted, the urine becomes less acid, or may even become alkaline. The greater the quantity of water excreted the more nearly the reaction approaches that of the blood; hence drugs that increase glomerular activity lessen the acidity of the urine. It would seem that the basic phosphate, when it exosmoses with a large quantity of water, is not so easily decomposed into the acid phosphate as occurs in the normal secretion. Riedel, in the Pharmacological Institute in Heidelberg, experimented with rabbits and dogs as to the influence of diuresis on the reaction of the urine. In order to exclude the influence of digestion he withheld food from them for several hours before the experiments. He withheld the food from the rabbits nineteen hours or more, so that the urine would become acid before he began the experiment. He found that neutral salts, like sodium chloride, sodium sulphate, sodium nitrate, also theobromine and sugar, caused the acid urine to become neutral, then later alkaline, and again acid, as the effect of the drug wore away.

#### ON COMPOSITION OF THE URINE.

*I. Drugs contracting the Efferent Vessels.*—This action causes the following to occur:

1. Less blood passes through the kidney.
2. Hence less urea is excreted.
3. More water is excreted by the glomeruli because the glomerular pressure is raised. Therefore these drugs diminish urea and increase the water.

*II. Drugs dilating the Afferent Vessels.*—This action causes the following to occur:

1. More blood passes through the kidney.
2. Hence more urea is excreted.
3. More water is excreted by the glomeruli because the glomerular pressure and circulation is increased. Therefore these drugs greatly increase the water and slightly the urea.

*III. Drugs stimulating the Convoluted Tubules.*—This action causes the following to occur:

1. Same amount of blood passes through the kidneys.
2. Far more urea and slightly more water by the convoluted tubules.
3. The same amount of water is excreted by the glomeruli. Therefore these drugs slightly increase the water and greatly increase the urea.

*IV. Drugs paralysing the Constricted Loops.*—Nothing is known about this, but if a drug should be found to act solely in this way, it is probable that the following would occur:

1. Same amount of blood would pass through the kidneys.
2. Same amount of urea would be excreted.
3. Same amount of water would be excreted.
4. Little water would be reabsorbed. Therefore such a drug would increase the water, while the urea would remain the same.

#### ACTION OF DIURETICS IN DISEASE.

On first thought it might be supposed that diuretics would be used mainly in the treatment of disease of the kidneys, but they are rarely used for this purpose. When in nephritis the function of the kidneys is compromised, causing symptoms from the accumulation of waste in the body, diuretics given to stimulate the diseased kidneys, as a rule, will increase the trouble. It is usually best to try to make the skin and intestines do the work of the crippled kidneys for the time being. Sometimes, though, the alkaline diuretics may be of service, because, instead of determining blood to the kidneys, they may simply deplete the kidneys by increasing outward osmosis through the secreting cells, and in that way remove the waste from the blood without doing the kidneys any harm. But if there is extensive injury of the renal structure, you cannot expect any diuretic

to increase the secretion. There are, however, pathological conditions in other organs where diuretics may often be of great service. These conditions are different, sometimes directly opposite; hence to be of service in a certain condition it is not sufficient that the drug simply increase the flow of urine, but it must do this in a certain way. So you see the advantage of knowing the exact points in the mechanism where the drug acts in order to select the proper diuretic upon a rational basis. Aside from their limited use in the treatment of disease of the kidneys, diuretics are indicated in the treatment of the six following pathological conditions:

1. *To remove Excessive Accumulations of Water in the Body when the Blood-Pressure is too Low.*—In cardiac insufficiency there is low arterial and high venous pressure, and, as a consequence, there is not only dropsy, but lessening of the urine because of the low blood-pressure. The diuretics to select here to increase the urine are those that raise the blood-pressure by increasing the pumping power of the heart. These drugs are of great service, because this action on the heart not only increases the urine and removes the dropsical effusion, but at the same time prevents the further accumulation of effusion. Digitalis, strophanthus, and squill render prompt service in this condition. A diuretic which acted only on the kidney without being combined with one which increased the action of the heart would not be of much service, and one which lowered the blood-pressure would do great harm. Sometimes it may be advantageous to combine other diuretics with such drugs as digitalis to hasten the removal of the water from the tissues. Greater secretion will result if diuretics acting at different points are used together:

- (1) Digitalis to raise systemic blood-pressure.
- (2) Broom to contract the efferent vessels of the kidney.
- (3) Sweet spirit of nitre to dilate the afferent vessels of the kidney.
- (4) Acetate of potassium to stimulate the convoluted tubules.

2. *To remove Excessive Accumulations of Water in the Tissues which is not Due to Low Arterial Pressure.*—In this condition diuretics are of nothing like the service they are in heart-disease. In hepatic cirrhosis the passage of the portal blood through the liver is obstructed, and, as a result, there is leakage from the distended portal vessels into the peritoneal cavity. If diuretics are used to remove this, it is not so important that they raise the arterial

pressure, as is the case in heart-disease. A diuretic is wanted that causes a large quantity of water to be secreted regardless of its effect upon the blood-pressure.

But hydragogue cathartics are far more efficient than diuretics, because they lower the abnormally high portal pressure and stop the outward passage of the water into the peritoneal cavity.

3. *To remove Water from the Blood when the Arterial Pressure is too High.*—At the onset of many acute diseases, as tonsillitis, bronchitis, etc., there is high arterial tension, which hastens the extension of the disease. This high pressure may be lowered by diuretics, which, by draining a large quantity of water from the blood, lower the pressure. It is evident that such diuretics as raise the arterial pressure will do harm by still further increasing the high pressure. For this purpose it is best to select a diuretic—

(1) That will greatly increase the secretion of water, either by dilating the afferent or contracting the efferent vessels of the kidney.

(2) That will lower the systemic blood-pressure.

(3) That will at the same time produce marked diaphoresis.

Because sweet spirit of nitre dilates the systemic arterioles, causes diaphoresis, and increases the secretion of urine by dilating the afferent vessels of the kidney, it is often used with benefit during the first hours of acute sthenic fevers.

4. *To remove Waste from the Body.*—Sometimes in disease there is excessive production of waste. This occurs in rheumatism, gout, uric-acid diathesis, and in many acute diseases. For this purpose those diuretics which stimulate the convoluted tubules and increase the secretion of waste products are indicated. They are of still more service if at the same time while circulating in the blood they increase oxidation and burn up this pathological material; hence the alkalies—lithium and potassium—are of service here because they increase oxidation as well as hasten the removal of waste by the kidneys.

5. *To lessen the Acidity of the Urine.*—In debility and other conditions sometimes the urine is excessively acid, and, as a result, there is frequent micturition from the irritation. In the uric-acid diathesis there may be irritation from the uric-acid crystals. Or, again, the urine may not be too acid, but the urinary tract may be inflamed, as occurs in gonorrhoea, so that the normal urine causes irritation. For all these cases the alkaline diuretics are of service.

6. *To increase the Acidity of the Urine.*—In cystitis and other affections there is sometimes ammoniacal decomposition of urine, which, by its irritation, causes frequent painful micturition. For this purpose benzoic acid, salol, and other salts of salicylic acid are used.

#### LITERATURE REFERRED TO.

KOSTJURIN. Arch. f. experimentelle Path. u. Pharmacologie, Band xxv., Heft 2.

BERKLEY. The Journal of Pathology and Bacteriology, vol. i., No. 4.

COHNSTEIN. Arch. f. experimentelle Path. u. Pharmacologie, Band xxx., Heft 2.

DRESER. Arch. f. experimentelle Path. u. Pharmacologie, Band xxix., Heft 6.

COHNSTEIN. Berlin. Klinische Wochenschrift, No. 4, 1893.

SCHRÖDER AND LANNGAARD. Abstract in THERAPEUTIC GAZETTE.

JACOBY AND SOBIERANSKI. Arch. f. exper. Path. u. Pharmak., Band xxix., Heft 2.

RIEDEL. Arch. f. experimentelle Path. u. Pharmacologie, Band xxx., Heft 2.

ADAMI. The Practitioner, vol. xlii., No. 4.

BRADFORD. The Journal of Physiology, vol. x., No. 5.

MUNK. Deutsche Med. Wochenschrift, No. 1, 1889.

SEHRWALD. "Ueber die Bedeutung des Nervensystems für die Niere," 1887.

#### THE ADVANTAGES OF AMORPHOUS PHOSPHORUS OVER THE OFFICIAL FORM.

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THE investigations of Wegner, Bradley, Broadbent, Thompson, and others should leave little doubt as to the value of phosphorus as a stimulant to bone-growth and in the treatment of disorders due to exhaustion or wasting of the nervous tissues. The remedy, while undoubtedly possessing power potent for good, has the great disadvantage of not being entirely safe, as disorders of digestion, nephritis, and fatty degeneration are not infrequently attributed to its administration. On account of these untoward effects many authors have wisely insisted upon the utmost precaution in its use. As is well known, the form of phosphorus exclusively employed in medicine is the vitreous variety, from which both of the official preparations are made. Both of these preparations are open to the objections named above, and on account of the readiness of phosphorus to undergo change when exposed to the air, the pills are necessarily made by a complicated process which renders their extemporaneous manufacture difficult. As to phosphorated oil, the other official preparation, its taste is ex-

treinely nauseous, as may be inferred from its combination (phosphorus, ether, and oil).

It is on account of these disadvantages of the vitreous phosphorus that I am led to suggest the employment of the amorphous or red variety. The amorphous phosphorus is made by heating the vitreous variety to 250° C. in the absence of air, and possesses the following advantages over the official variety: It does not readily undergo change at ordinary temperatures; it is almost entirely without taste or odor, therefore it can readily be made into pills at a moment's notice; it is free from irritant or caustic effect, consequently it is far less liable to give rise to irritation or inflammation of the gastro-intestinal and genito-urinary tract; but its greatest advantage lies in the fact that it is non-toxic and therefore far safer.

That it has the same physiological effect as ordinary phosphorus seems to be proved beyond doubt by Kelly, who, while experimenting upon himself to determine if it was toxic, experienced the full physiological effects of vitreous phosphorus. The following brief extracts are made from Kelly's essay, which has never been published:

*Experiment 1.*—For the first three days  $\frac{1}{10}$  grain of amorphous phosphorus was taken every two hours, nine doses being taken each day. On the fourth day each dose was increased to  $\frac{3}{10}$  grain, and from the tenth until the twenty-fifth day  $\frac{1}{10}$  grain every two hours, nine doses a day being taken.

*Effect.*—Mental excitement, headache, vertigo, priapism, nocturnal emissions of semen, followed about the twentieth day by nervous exhaustion.

Return to his normal healthy condition in about two weeks after discontinuing the drug.

*Experiment 2.*—About two weeks after completing Experiment 1 he again began taking amorphous phosphorus in doses of  $\frac{1}{10}$  grain, increased on the fifth day to  $\frac{2}{10}$ , and on the tenth day to  $\frac{4}{10}$  grain, nine doses being taken each day.

Priapism and nocturnal seminal emissions were among the most pronounced effects. The drug was discontinued on the seventeenth day, and he soon returned to his normal condition.

*Experiment 3.*—About six weeks after completing Experiment 2 he took at a single dose 20 grains of amorphous phosphorus. The physiological effects came on promptly. Priapism, vertigo, nausea, followed by muscular tremors, cold, clammy skin, great exhaustion, and the most pronounced effects. For some weeks he was in a state of nervous exhaustion, from which he gradually returned to his normal

condition. He is now in good health and shows no ill effect of this rather vigorous medication.

Beese publishes a case in which 30 grains of amorphous phosphorus were taken by a young woman with suicidal intent, no toxic symptoms having been manifested.

My own experiments upon animals are in accord with those who assert that the substance in large quantities is non-toxic. My investigations as to the effect of long-continued doses is as yet incomplete.

These records would seem to indicate that amorphous phosphorus, while having the same physiological action as the vitreous variety, is to be preferred, as it is much easier to administer, less irritating, and, above all, is a far safer remedy.

*THE USE OF SUBCONJUNCTIVAL INJECTIONS OF MERCURIC BICHLORIDE IN VARIOUS OCULAR AFFECTIONS, WITH A REPORT OF FIFTEEN CASES SO TREATED.*

READ BEFORE THE PHILADELPHIA COUNTY MEDICAL SOCIETY,  
DECEMBER 27, 1893.

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**D**URING the past two or three years much has been written concerning the subconjunctival injections of antiseptic solutions in various affections of the eye, especially by French surgeons, who are the strongest advocates of the method.

It is by no means a new procedure, for, as early as 1866, Rothmund\* used a solution of sodium chloride in this manner for clearing up corneal opacities; and since this time, but more especially within the past four or five years, various surgeons have employed the method in the treatment of numerous ocular diseases.

Valude, the editor of the *Annales d'Oculistique*, in the early part of this year sent a communication to many oculists in different parts of the world, asking a number of questions in regard to the method, in order that proper conclusions could be formed by comparing the experiences of many. The results of this inquiry have been recently published,† and the experience of the large majority of the French surgeons included therein is in favor of the method.

It is not the purpose of the present paper to discuss the theory of subconjunctival injections and the value of the different drugs that have been employed in making them. Those interested are referred to the articles by Darier, which were published in the *Archives d'Ophthalmologie*, 1891, p. 449, and in the *Annales d'Oculistique*, April, 1893; also to the clinical lecture of Dr. de Schweinitz in the THERAPEUTIC GAZETTE, June, 1893.

The manner of making the injections is as follows: The conjunctival cul-de-sac is thoroughly cleansed with a freshly-made saturated solution of boric acid or with a solution of bichloride of mercury (1 to 8000), a few drops of a four-per-cent. solution of cocaine are instilled, and as soon as anæsthesia is produced the lids are separated by an assistant, while with a pair of fixation forceps the conjunctiva is seized about eight millimetres from the corneal margin, lifted up, and, the needle of the syringe having been inserted, the desired amount is forced out. The injection is made by Darier with a Pravaz syringe, but an ordinary hypodermic syringe, with a platinum needle, will answer the purpose very well. It is of the utmost importance, to be sure, that the barrel of the syringe be made thoroughly aseptic by the use of a strong solution of sublimate or carbolic acid; the needle should be brought to a red heat in the flame of an alcohol lamp prior to each injection, for a similar purpose. In fact, all the precautions against infection are taken just as if a corneal section were to be made.

If this be done, the danger of serious complications is reduced to a minimum. Slight chemosis follows each injection, but soon passes away. Occasionally a small conjunctival blood-vessel is punctured, giving rise to a considerable hemorrhage, but, beyond the discoloration thus produced, the accident is of little consequence. The cases of keratitis, or hypopyon keratitis, that have been reported as following an injection must have been due more to the imperfect sterilization of the instruments than to the operation itself. I have never seen such a complication.

The frequency of the injections, as well as the dose, depends upon the severity of the case. The strength of the solution employed is 1 to 1000, and the amount of the first injection about two minims. Much more than two minims has been given at a single injection, and repeated daily. But it seems to be generally conceded that it is better to begin with small doses, frequently repeated, say every other day, and to increase gradually the quantity in-

\* *Klinische Monatsblätter für Augenheilkunde*, 1866, p. 171.

† *Annales d'Oculistique*, August, 1893, p. 145.

jected as the idiosyncrasies of the patient are ascertained and the severity of the affection demands.

As to the number of injections to be made before the treatment should be abandoned, in case no improvement is observed after the first two or three have been given, no fixed rule can be followed. Darier says it is useless to continue after ten injections have been made if some improvement has not been noticed. On the contrary, as many as fifty or sixty have been given in a single case, with improvement. But, generally, if any benefit will accrue from the use of this method, it will be noticeable after a few injections, and the length of time the treatment should be continued depends upon the progress of the case, each being a law unto itself.

The cases in which the method has been employed by various observers are widely different, but all surgeons seem to agree that it should not be used when there is present any vascular stasis sufficient to prevent the quick absorption of the remedy. The replies to Valude's letter of inquiry indicate that the best results are obtained in diseases of the uveal tract, chronic in nature, though there are also reports of excellent results having been obtained in diseases affecting other portions of the eye.

The following cases, reported by request of Dr. de Schweinitz, represent the diseases which have received the treatment in his service in the Jefferson Medical College Hospital:

CASE I.—*Scleritis*.—B. S., female, aged forty-three, housekeeper, presented herself at the eye dispensary with a well-marked scleritis in the left eye. There were two large patches of infiltration, one above and one to the outer side of the cornea. The ciliary pain was intense and the cornea somewhat thickened. No history of syphilis or rheumatism. The vision of the right eye equalled  $\frac{2}{80}$ ; of the left,  $\frac{1}{80}$ . After using both local and constitutional treatment for some time without any benefit, we had recourse to the subconjunctival injections of sublimate.

On the 28th of April  $1\frac{1}{2}$  minims were injected just above the cornea and near the patch of infiltration. On May 1, three days later, the pain had entirely disappeared, the bulbar injection was almost gone, and the two patches of infiltration were much smaller. On this day an injection was made below the cornea. The patient did not return until May 12, saying she had felt so well she had thought it unnecessary to come earlier. There still being a little bulbar inflammation, however, a third injection was given, this time amounting to 2 minims.

On May 20 the patient was to all appearances rid of the attack, and was dismissed from further attendance. Her vision on this date was for O. D.,  $\frac{2}{80}$ ; for O. S.,  $\frac{2}{80}$ .

CASE II.—*Syphilitic Serous Iritis (Keratitis Punctata)*.—F. M., male, aged nineteen, morocco-worker; had an attack of gonorrhoea nine months before he presented himself for ocular treatment, followed a month later by a hard chancre. The ocular disease dates from this time. Treatment had been received during his first attack for three and a half months at another hospital. In each eye there were found traces of old iritic inflammation, and the corneas were infiltrated and hazy. Vision for O. D. equalled  $\frac{2}{80}$ ; for O. S.,  $\frac{1}{80}$ . On April 28 he was given an injection of sublimate beneath the conjunctiva, and between this time and August 14 he received fourteen injections. The vision on this date was for O. D.,  $\frac{2}{80}$ ; for O. S.,  $\frac{2}{80}$ ; a very great improvement.

CASE III.—*Syphilitic Irido-Cyclitis*.—J. M., male, aged twenty-nine, driver, with well-marked irido-cyclitis in the right eye, of syphilitic origin, with a contracted pupil, pericorneal injection, intense pain, and numerous posterior synechiæ, presented himself for treatment on April 10. The usual treatment was given, including leeches to the temple; but on the 20th he did not seem to be any better. We then gave him an injection of sublimate, and on the 28th he was so much improved that another was given. On May 1, three days later, the ciliary inflammation was gone, the pupil round, and the vision, which before the treatment was for O. D.  $\frac{2}{80}$  and for O. S.  $\frac{2}{80}$ , was now  $\frac{2}{80}$  for each eye.

CASE IV.—*Corneal Ulcers*.—M. E., male, aged thirteen, tobacco-stripper, came on March 23 to obtain treatment for recurring phlyctenular ulcers of the left eye. There was one large infiltrated ulcer in the lower inner quadrant of the cornea, with several smaller ones surrounding it. Large maculæ existed as sequelæ of former ulceration. He received the customary treatment, and the ulcers healed very sluggishly.

Having presented himself with a third attack, he was given three injections of sublimate at proper intervals, the injections being made in that portion of the conjunctiva nearest the ulcers. They healed about as quickly as with the ordinary treatment, the disturbance after each injection being such that considerable time had to elapse before another could be given. After the treatment his vision was the same as when he was first seen.

CASE V.—*Syphilitic Plastic Iritis*.—M. J.,

male, aged thirty-five, coachman. Iritis in right eye of one week's duration. Intense ciliary injection, extreme tenderness, pupil small and immobile. There had been a papular eruption on his body some months before. His vision was for O. D.,  $\frac{7}{8}$ ; for O. S.,  $\frac{3}{8}$ . One injection of sublimate was given, and on the following day the tenderness had disappeared, the ciliary injection was very much diminished, and the pupil was large and round. After this the patient was not again seen; so whether he continued to improve so rapidly that he thought it unnecessary to come to the dispensary again, or whether he became worse and applied elsewhere for treatment is only a matter of conjecture.

CASE VI.—*Syphilitic Plastic Iritis*.—A. P., female, aged fifty-two, housekeeper. Iritis in right eye of three weeks' duration. Vision for O. D.,  $\frac{2}{10}$ ; for O. S.,  $\frac{3}{8}$ . Pupil small and slightly oval horizontally, but immobile. Initial lesion ten years ago. Same eye inflamed twice before. Patient was given two injections of sublimate, after which the inflammatory symptoms had subsided, but there remained a slight attachment of the iris below. One month later a similar inflammation developed in the left eye, but one injection completely dissipated it, leaving no synechia.

CASE VII.—*Non-specific Parenchymatous Keratitis*.—J. B., male, aged twenty-eight, machinist, presented himself for treatment with a well-developed inflammation in the left eye, characterized by diffuse infiltration in the parenchyma of the cornea. The vision of this eye has always been poor, but a change for the worse was noticed four weeks ago. Denies any specific history. After a fair trial of internal and local medication, with very little improvement, he was given, at proper intervals, sixteen injections of sublimate. At the time the treatment was commenced his vision was for O. D.,  $\frac{2}{8}$ , partial, and for O. S.,  $\frac{7}{8}$ . At the time of the last injection it was for O. D.,  $\frac{4}{8}$  and for O. S.,  $\frac{3}{8}$ . The cornea of the left eye was comparatively clear. He had compound hypermetropic astigmatism, but the proper correction failed to make him see any lower on the test-card.

CASE VIII.—*Syphilitic Plastic Iritis*.—M. S., male, aged thirty, laborer. Iritis in right eye. Has had previous attacks. Patient is illiterate and a Russian, so it is impossible to obtain vision. One injection of sublimate reduced the inflammatory symptoms, leaving the pupil round and mobile.

CASE IX.—*Syphilitic Serous Iritis*.—A. G., male, aged twenty-eight, laborer. Well-marked specific iritis, serous in type, in the right eye.

There have been a number of previous attacks. Vision for O. D. is  $\frac{3}{8}$  and for O. S.,  $\frac{3}{8}$ . One injection was given, and two days later, when patient returned, the inflammation had subsided, the pupil was round, and the vision for each eye was  $\frac{3}{8}$ . Three months later this patient had another attack in the same eye, which was promptly checked by two injections.

CASE X.—*Interstitial Keratitis*.—F. A., male, aged twelve, presented himself with a most severe interstitial keratitis, of a scrofulous type, in both eyes. The lachrymation and photophobia were so great that it was impossible to measure his acuity of vision. He was given four injections of sublimate at differing intervals, his conjunctivitis being treated at the same time. At the expiration of this time—about two weeks—the patient left the hospital, but was much improved, readily counting fingers at twelve inches, both eyes being open and free from irritation, although no change in the corneal infiltration had occurred.

CASE XI.—*Interstitial Keratitis*.—P. L., female, aged seven. Has had badly-inflamed eyes since eight months of age, at which time there was present otitis media purulenta and a skin eruption covering almost the entire body. That peculiar variety of teeth to which Hutchinson's name has become attached is also present. The disease has been marked with frequent improvements and exacerbations. At the time the patient was first seen, the opaqueness of the cornea was so great that the pupils could scarcely be distinguished. Vision equalled the counting of fingers at six inches. In addition to the corneal inflammation there was a severe mucopurulent conjunctivitis and a chronic rhinitis. After the nasal and conjunctival inflammations had been somewhat reduced and internal medication had been employed, the vision became  $\frac{3}{8}$  for each eye. Subconjunctival injections of bichloride were now tried at three different times, but the eyes became so much worse after each trial, the vision being reduced to  $\frac{2}{10}$  for each eye, that this form of treatment had to be abandoned. Internal medication combined with local measures are now being used, and the patient is still improving.

CASE XII.—*Syphilitic Plastic Iritis*.—F. W., male, aged twenty-six, carpenter. Traces of old iritis in both eyes; now, a fresh attack in the left eye; initial lesion six months ago. Two injections of sublimate were sufficient to reduce the inflammatory symptoms.

CASE XIII.—*Scleritis*.—M. D., female, aged twenty-eight, housekeeper, presented herself for treatment of a severe scleritis of ten days' duration. Has had two previous attacks in the

same eye, the first six years ago, the second two and a half years ago. Each time the attack lasted for several weeks. Tension is —2; patient is pregnant. After employing the usual means of treatment for three weeks, with no improvement, an injection of sublimate was given. On the following day the inflammation had subsided considerably and there was less pain. The improvement continued for four days, when another injection was given; but the reaction from the last one was so great, and the eye suddenly became so much worse, that this plan of medication was abandoned.

CASE XIV.—*Gonorrhœal Iritis*.—J. R., male, aged twenty-five. Two years ago had gonorrhœal iritis, following an arthritis of the knee and ankle of like origin, exceedingly stubborn in character, lasting for many weeks. Present attack (May 1, 1893) confined to the right eye, beginning five days before examination. Typical plastic iritis, associated with violent pain. Vision  $\frac{1}{8}$ , barely. Two injections of the sublimate solution given respectively May 1, 1893, and May 5, 1893. Twenty-four hours after the first injection, iris free and pupil round. One week after second injection, irritation entirely subsided; vision  $\frac{1}{8}$ .

CASE XV.—*Corneal Ulcer*.—J. K., male, aged sixty-one, presented himself for treatment May 15, 1893, with a large sloughing ulcer of the cornea in its lower portion and prolapse of the iris, the preserved portion of the anterior chamber being filled with blood and the bulbar conjunctiva swollen and œdematous; tension diminished; vision equals faint light perception. Atropine and boric acid ordered locally, and May 16, 1893, a subconjunctival injection of sublimate was given. Immediately afterwards intense pain and chemosis, which lasted for the rest of the day and during the night, and when he appeared the following day the eye was so swollen that the injection was not repeated. The ulcer was even more ragged and unhealthy than on the previous day. Under iodoform insufflations and a pressure bandage rapid healing took place.

To recapitulate, there were the following cases: 2 scleritis, 1 interstitial keratitis (scrofulous), 1 interstitial keratitis (specific), 1 parenchymatous keratitis (non-specific), 1 syphilitic irido-cyclitis, 2 syphilitic serous iritis, 4 syphilitic plastic iritis, 1 gonorrhœal iritis, 2 corneal ulcer.

In the two cases of scleritis the results in one were good, while in the other, after the first injection, they were negative.

In the interstitial keratitis of a scrofulous

type the patient's condition was rapidly improving, but he discontinued the treatment.

In the specific interstitial keratitis the injections created such a disturbance that they had to be abandoned.

The case of non-specific parenchymatous keratitis was rapidly improved.

In the two cases of corneal ulceration, one was relieved of the inflammatory symptoms about as rapidly as with the ordinary method of treatment, while in the other the treatment was discontinued on account of the great degree of inflammation which followed the first injection.

In all the cases of iritis and in the case of irido-cyclitis the method gave prompt and effectual relief.

A solution of atropine was employed in each case from the beginning of the treatment; but in several of the cases of iritis it was used without result for several days, and on the day following an injection of sublimate, the synechiæ, as a rule, were broken and the pupils round.

125 NORTH SEVENTEENTH STREET.

#### A CASE OF VIOLENT BLEPHAROSPASM, WITH CURE.

Merz (*Klin. Monatsbl. f. Augenheilk.*, October, 1893) reports the case of a patient with violent cramp of the orbicular muscle, clonic in type, lasting from ten to twenty seconds at a time. The lid could then be opened, but there was quick repetition of the cramp. There was slight conjunctival catarrh and incipient cataract, with normal ophthalmoscopic appearances. There was contraction of the visual field for form and colors. Soothing local applications were of little moment, and the patient was given ichthyol internally, and ordered to wear a band around the brow composed of alternating strips of leather and metal. Some improvement followed this, but the marked and rapid cure of the case resulted after the injection of strychnia into the region of the supraorbital nerve, pressure on which temporarily stayed the spasmodic movements. In concluding, the author attributes only a very slight influence to the treatment by suggestion,—namely, the administration of ichthyol and the wearing of the band around the forehead. A definite improvement occurred only after the strychnine injections, and also in a very short time, and he believes that it was due to the effect of these upon the supraorbital nerves.

# The Therapeutic Gazette

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## Leading Articles.

### THE TREATMENT OF GALL-STONE COLIC.

THE treatment of gall-stone colic, except so far as the administration of morphine by the hypodermic needle is concerned, is to a very great extent a bugbear to the practitioner of medicine. Yet the condition is one which demands that active measures for the relief of the attack which is present and the prevention of all future attacks should be instituted. Within the last few years a large number of writers in America and Europe have spoken in high praise of the employment of olive oil in large doses for the relief of an attack when once developed. Others have spoken equally enthusiastically of turpentine, and still others have recommended phosphate of sodium or Glauber's salt, both for the relief of the attack and for the prevention of subsequent illnesses. These remedies, of course, do not make up the

entire list of drugs which have been employed in this aggravating condition, but may be considered, with perhaps the addition of potassium iodide and salicylate of sodium, as being those which have received the highest praise within recent years. In the *Manchester Medical Chronicle* for December, 1893, Dr. Brockbank has contributed a valuable and interesting article upon the pathology, etiology, and treatment of gall-stone, in which he considers the formation and composition of these stones as they occur in man and the lower animals, and calls attention to the fact that the disease is quite frequent among Anglo-Saxons, but very rare in Eastern countries. Thus, in the Royal Infirmary in Manchester an examination of the post-mortem records showed that gall-stones were found in nearly three per cent. of all the males and nearly eight per cent. of all the females on whom a post-mortem examination was made.

In order to determine what remedies could be used most rationally in this condition, Brockbank instituted a series of interesting investigations as to the solvent power of drugs upon gall-stones outside of the body, although he recognizes the fact that the conditions under these circumstances are quite different from those which exist during an attack. As a result of these studies he finds that none of the inorganic drugs have any solvent power whatever upon gall-stones, although by freeing the portal circulation and keeping the alimentary canal clear of fæces he believes that they are powerful adjuvants to treatment. He finds, on the other hand, that gall-stones placed in olive oil undergo comparatively rapid solution, so that nearly seventy per cent. of their weight is lost in the course of ten days. Still more powerful for the solution and breaking up of the stones did he find the animal soap of the British Pharmacopœia, which caused a very much more rapid solution of these bodies.

He is, therefore, inclined to believe that the olive-oil treatment of gall-stones is based on the most rational principles; but it is not to be forgotten that under natural circumstances the stone is very largely protected from the action of the oil, and that when olive oil has seemed to give relief it has fortunately acted more promptly than the time required in his experiments. Brockbank is inclined to explain this by supposing that olive oil acts as an efficient antispasmodic as well as lubricant and solvent, and that the relaxation of the spasm of the gall-ducts and of the muscular fibres in the wall of the intestine, combined with partial solution or softening of the surface of the stone, explains how olive oil, when given in full dose during



an attack of colic, frequently gives relief. He believes that in those cases where the oil cannot be taken by the mouth, it may be given with advantage by the rectum, although he confesses that it is difficult to understand how this action can do great good, except, perhaps, by soothing any intestinal irritation. So far as the treatment of the patient is concerned between the attacks, Brockbank believes that the ingestion of four to eight ounces of olive oil per day will act as the best prophylactic, but appreciates at the same time that few patients would be willing to submit to this treatment without strong opposition. Such patients he believes should receive daily rectal injections of the oil, and if this after a short time becomes so disagreeable that the patient rebels, he thinks that a favorable influence can be exercised by ordering a diet containing large quantities of fat. It would also appear from his experiments that oleic acid is a valuable drug for internal administration under these circumstances. He is unable to discover that turpentine, ether, or chloroform have any direct effect upon the stone, and believes that any advantages obtained by their use are due to the antispasmodic influence. In those cases where a cholecystotomy has been performed and in which a calculus cannot be felt, yet in which the physician is positive a calculus exists, Brockbank suggests the daily injection into the gall-bladder of olive oil or of one-half-per-cent. solution of watery solution of animal soap of the British Pharmacopœia. This treatment he believes can do no harm, and may be advantageously substituted by a similar injection of oleic acid. On the other hand, chloroform, turpentine, and ether, if so used, might produce a dangerous amount of irritation.

From a comparatively limited experience, we are inclined to endorse everything which Brockbank has advised in connection with his useful clinical and experimental research, particularly in regard to the employment of phosphate of sodium as a prophylactic, given in the dose of from 2 to 4 drachms, or more, in hot water every morning before breakfast. We have certainly seen this treatment result in the passage of large amounts of what might be called hepatic gravel, and in the great amelioration of the attacks both in severity and frequency. Perhaps, by the frequent dislodging of small stones before they are large enough to obstruct the duct, prophylaxis may be accomplished.

Another remedy which, in the hands of some practitioners, has given good results, it is claimed, is the succinate of sodium, 5 to 20 grains three times a day. So far as we know,

its employment is purely empirical, and there are no scientific studies which would indicate that it has any particular value.

To those who are interested in this subject, Dr. Brockbank's paper will prove of great value. We hope that he will continue his studies, and that others may be stimulated to similar research, in order that more light may be thrown upon this manifestation of perverted hepatic functional activity.

#### *THE ABORTIVE TREATMENT OF GONORRHOEA.*

THE abortive treatment of gonorrhœa—that is, the application of remedies which so modify the disease that it runs its course in a few days or, at most, two or three weeks, in place of the six to ten weeks usually required for cure—is, in one form or another, almost as old as the disease. Until discovery of a specific germ, and hence power to distinguish in the earliest stages gonorrhœal urethritis from simple inflammatory attacks due to mechanical or chemical irritation, or to micro-organisms other than the gonococcus, there was no good reason for believing that treatment was ever successful in aborting gonorrhœa. It reasonably could be claimed that all cases which were cured were not specific in character, and hence would have recovered without treatment in a few days.

Since the general recognition of the gonococcus as the causative agent in gonorrhœa it is easy to determine whether or not abortion of the disease is ever possible, for this micro-organism is readily stained, is easily recognized by even an indifferent microscopist, and on careful search can be found even in the earliest discharge. Though it has been proved that there is a pseudo-gonococcus present in the normal urethra which can be distinguished from the gonococcus only by culture, this is so rare that its presence need not be considered, and we can safely assume that when a urethral discharge contains gonococci, the disease is certainly gonorrhœa; that if it is a first attack, and is not treated, running will become profuse, will continue for six to ten weeks, and will be accompanied by ardor urinæ, chordee, and possibly symptoms of acute posterior urethritis. If, under any treatment, attacks of urethral inflammation, the discharge of which shows the presence of gonococci, are cured in three days to fourteen or twenty-one weeks, it is safe to assume that treatment is responsible for this cure and that the disease has been aborted or

materially shortened. As the case stands to-day, then, all that is needed to prove that gonorrhœa can be aborted is a record of cases contributed by a conscientious observer, in which, before treatment was begun, gonococci were discovered in the discharge.

Diday records many successful attempts at abortive treatment, but unfortunately omitted to prove by the presence of the gonococci the specific nature of the urethritis. The absence of microscopical examination discredits his results from a scientific stand-point, since he applied his treatment particularly to those cases in which the early symptoms suggested rather simple irritation than gonococci infection. Diday held that an abortive injection must be practised as early as possible, and that the favorable time is when the slight secretion is scarcely colored and more mucous than purulent, and when the lips of the meatus are not swollen. His abortive injection is a five-percent. solution of nitrate of silver, only the fossa navicularis being subject to treatment, the finger pressing the urethra so firmly one and a half inches back that none of the fluid can pass behind this point. This lotion is injected under pressure, so that all the folds and follicles of the navicular fossa are distended.

Though Diday's results can be questioned because of the lack of examination, others have followed his methods and have obtained satisfactory results. Thus, Edward Martin reports the Diday abortive treatment in eight cases. In seven of these gonococci were found. In six of the cases the patients were well in the first ten days, and there was no recurrence of discharge. This percentage of success is probably considerably higher than that obtained by others, since there have been few reports favoring Diday's method, though undoubtedly it has been tried by many.

A reason for failure of this method in a large proportion of cases is given by Janet, who holds that not only do the gonococci quickly penetrate to the subepithelial tissues, but that they rapidly spread along the urethra, so that by the fourth day of the attack this entire channel is often infected, the inflammation involving the posterior as well as the anterior urethra. Hence any treatment limited to the first one or two inches of the urethra will, in the large number of cases, prove fruitless.

The method of attempting abortion by frequent injections of weak antiseptic lotions, such as nitrate of silver, corrosive mercuric chloride, or mercuric salicylate, has also given many satisfactory results, since thus the superficial microbes are destroyed and the whole

mucous membrane is washed out. This is the method which Janet strongly favors, though he abandoned it for one which he describes at length, and one which, if his statistics are correctly reported, is destined to radically change the treatment of gonorrhœa.

This consists in injections of permanganate of potassium. Janet reports, of twenty-one cases in his first series of attempts at aborting gonorrhœa, thirteen were successful and eight failed; the failures he attributes to imperfect technique. The second series of fifteen cases resulted in thirteen successes. In eleven of these the cures were very rapid.

His method is as follows: In the first place, careful search must be made for the gonococcus; next it must be determined whether the inflammation is anterior, total, or extra-urethral. The diagnosis of anterior and posterior infection is made by means of the urine passed in two portions. If the second portion is perfectly clear after the patient has remained for a long time without urinating, it is quite certain that the posterior urethra is not involved. When the second portion contains pus, diagnosis of posterior urethritis is assured. During the whole treatment the second portion of water should be examined, since, even though on first examination the posterior urethra is free, it may subsequently become infected. Extraurethral crypts, in which the gonococci may be numerous, are always seen in cases of hypospadias, and are frequent in those who have an apparently normal meatus. They are readily found on separating the lips of the meatus, and are placed at the upper commissure. These extraurethral foci of infection should be carefully disinfected during the entire course of treatment, either by thoroughly washing or by more radical surgical treatment. Preputial folds should be washed out after each treatment and as often as possible between treatments. Vegetations should receive surgical attention before beginning treatment. Crypts of the meatus are washed by means of a fine canula, if they are wide and shallow; if they are narrow and deep, they should be opened, so that they communicate freely with the meatus. Abscesses, if present, should be opened and disinfected.

As to the condition of the urethra which allows of abortive treatment, the quantity of the discharge has little reference to this. The only condition which should prevent an attempt is in the case of hyperacute inflammation, great swelling of the urethra and meatus, painful erections during the night, and violent ardor urinæ, since under these circumstances

the treatment is painful, penetration of the lotion difficult, and hemorrhages are free. When applied to cases which have already reached this acute stage, the treatment cannot be called abortive.

A rubber siphon about three yards in length is attached to the reservoir. To the extremity of this tube is fixed a blunt conical glass nozzle, of such shape that the urethral orifice is entirely closed when the nozzle is applied. A hard rubber stop-cock is employed. The stop-cock, nozzle, and lower extremity of the tube are kept soaking in antiseptic solution. When the anterior urethra is to be irrigated, the reservoir should be elevated about one and a half feet; when the entire urethra is to be washed out, the elevation should be from three to five feet. The rapidity of flow is regulated by digital pressure exerted upon the soft rubber tube. Where the patient is extremely sensitive, or the resistance of the compressor urethræ muscle is unusually obstinate, cocaine may be used. This drug is introduced by means of a small syringe holding three drachms, the patient being directed to make an effort as though he were about to urinate as the injection is forced in. This allows it to penetrate into the posterior urethra and to anæsthetize this portion of the tube. The solution is held in the urethra for a few minutes; provided it is not of greater strength than one-fourth of one per cent., there is no danger from toxic effects. Permanganate solution should be warm, and the irrigation should be made immediately after urination. The patient having micturated, the glans and prepuce and crypts and follicles in the anterior urethra are thoroughly washed by means of a stream flowing through the glass nozzle. Finally, this nozzle is held firmly in the meatus and the bladder is filled. This backward flow into the bladder is encouraged by directing the patient to make efforts at urination. As soon as he feels an urgent desire to accomplish this act, the nozzle is withdrawn and he is encouraged to do so. If necessary, the bladder is again filled. The patient is then directed to change his linen, to wash his prepuce and glans with a solution of permanganate (1 to 2000) at least once between the irrigations, after micturition, and sometimes it is well to pack the meatus with absorbent cotton.

As to the strength of solution, it is almost impossible to determine what will be appropriate for any individual case. This must depend upon the intensity of the reaction. The more marked the inflammatory symptoms the feebler should be the dose, and *vice versa*. The indications as to inflammatory reaction are found in the ap-

pearance of the meatus, in the amount of discharge, and in the pain connected with urination. When the inflammatory symptoms are pronounced, 1 to 4000 is the proper strength with which to begin; if the symptoms are of moderate severity, 1 to 2000; if inflammation is practically wanting, 1 to 1000.

It should be borne in mind that with the same dose quite different effects can be produced, depending upon the manner in which the solution is applied. Irrigation with a weak solution, conducted slowly, the bladder being filled several times, produces the same effect as a strong solution irrigated rapidly, only a small quantity of liquid being employed, and, *per contra*, an irrigation of 1 to 2000 made with a pint, and filling the bladder but once, has no more marked effect than a full dosage of solution 1 to 4000. As to the repetition of the irrigation, this varies according to the intensity of the gonorrhœa. The more acute the latter the more frequent should be the irrigation. In subacute and chronic cases, once in twenty-four hours is sufficient. In acute cases, once every twelve hours, continued for two or three days; then once every eighteen hours until about the sixth day; then about once in twenty-four hours is sufficient. When two irrigations are made the same day, the second should always be with a weak solution.

Janet gives two tables of treatment: one for the abortive treatment of anterior urethritis, in which he begins with a strength of 1 to 4000, and on the eighth day finishes with a strength of 1 to 500; the second, in which he begins with the same strength; on the fifth day uses 1 to 1000 to the anterior urethra, 1 to 2000 to the posterior; on the eighth day uses 1 to 500 to the anterior, 1 to 1000 to the posterior. He holds that 1 to 1000 is as strong a solution as should ever be used to the posterior urethra, since 1 to 500 employed here will produce painful tenesmus. In the first few hours following irrigation there is a whitish secretion, followed by clear serum, sometimes slightly blood-stained; then absence of secretion; finally, reappearance of purulent discharge, together with the gonococci. The return of purulent secretion is an indication that the effect of the irrigation has passed off; hence these washings should succeed each other so rapidly that this recurrent purulent discharge should be entirely prevented,—that is, the second irrigation should be given during the dry period occasioned by the first irrigation.

As to the question of predicting a cure, this is difficult. Usually ten or eleven washings will be sufficient to bring about abortion. At

this time there is no discharge and few or no shreds. Sometimes there is a little mucous discharge, especially if a strong solution has been employed. In this case irrigations are stopped, the patient is advised to continue hygienic directions, and is told to report immediately on the first sign of white discharge. In the absence of this he appears eight days after the last irrigation.

If recurrence takes place, the discharge usually appears the second or fifth day after the last washing. Janet states that this happened in three out of fifteen cases; the first time because a focus of infection near the frænum was neglected, the last two times because a posterior urethritis was not suspected and received no treatment.

In case of recurrence the irrigations are again administered; sometimes two or three are sufficient; sometimes it is necessary to give the complete series. When the patients are cured, eight days after irrigation there will be found a non-inflammatory meatus, entire absence of discharge, and absence of shreds in the urine. For the next two months such a patient is peculiarly susceptible to renewed infection.

When, in spite of this treatment, there is slight mucous discharge, Janet advises irrigation of the anterior urethra with nitrate of silver (1 to 2000). The details of fifteen cases are given,—nine cases of anterior urethritis, six of total urethritis. The discharge when first observed varied in age from a few hours to five days. Two complete failures marked this series,—one because of the acute inflammation already developed when the patient came under observation and because of a diverticulum at the meatus, which was not divided; the other because of soft chancres which prevented thorough disinfection of the prepuce. There were three partial successes—that is, cure in thirteen, twenty-five, and thirty-eight days respectively—and ten complete successes.

Janet holds that permanganate has a peculiar action on the urethra. It occasions a slight œdema of the urethra; while this lasts not a single microbe can be found in the secretion. The success of the permanganate treatment seems to show that the microbes are so influenced by the alteration of their culture ground, dependent upon the œdema, that they cease to grow; hence if this condition of the urethra is sufficiently maintained, the complete destruction of the microbes is sure. It therefore follows that for successful treatment it is necessary to continuously keep the mucous membrane in a certain condition of reaction. Carried too

far, the growth of the microbe is encouraged; not carried far enough, inhibition ceases. This special reaction is fugacious in proportion to the acuteness of the gonorrhœa; hence the necessity for frequent repetitions of the injections. The special skill in treating this disease depends upon recognizing the required condition of reaction, and in so tempering the strength and the frequency of treatment that this condition is maintained for several days.

The advantages of this abortive treatment are well summarized by Janet. In case the anterior urethra alone is affected absolutely, no pain is excited; often when the entire urethra is washed, the pain is slight and fugacious. No injurious reaction is exhibited on the part of the urethral mucous membrane, as shown by the almost complete absence of epithelial exfoliation. Discharge almost entirely ceases from the first treatment, and in eighty per cent. of cases the treatment will be successful. The objection to the treatment is that it is troublesome for both the patient and the physician.

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#### HEMORRHAGIC GLAUCOMA AND ITS TREATMENT.

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EXTRAVASATIONS of blood into the retina, often indicative of arterio-sclerosis in general, or, in particular, of a more definite disease,—viz., malaria, gout, rheumatism, chronic heart lesions, Bright's disease, diabetes, syphilis, and affections of the liver- and blood-manufacturing glands,—are signs calling for critical scrutiny of the functions of the entire organism. In a certain number of these cases the hemorrhages are not only the indices of serious constitutional disturbances, but are also the precursors of sudden rise of tension, or a type of glaucoma, that, so far as vision is concerned, presents a singularly gloomy outlook. In fact, among the various diseases of the eye, during the course of which there may be the development of secondary glaucoma, none is fraught with graver prognostic apprehension than retinal hemorrhages. Hence an analysis of the opinions and experiences of the best-informed surgeons, as well as added personal experience, is of the utmost importance.

This, fortunately, has recently been accomplished by Bourgon, in France (*Annales d'Oculistique*, March, 1893), and Risley, in this country (*Ophthalmic Record*, December, 1893), and it is to the paper of the latter surgeon we direct attention as an excellent review, written in a judicial spirit, of the measures suited to the management of this serious ocular disease. Al-

though never a frequent disease, occurring once in about seven thousand cases, according to Bourgon, and four times among twenty thousand cases seen by Risley, its unfavorable prognosis, not only, as Wadsworth puts it, "as to sight, which is practically gone before the glaucoma appears, but as to the existence of the organ," renders welcome all fresh information on this topic.

Following Bourgon, Risley divides the disease into the hemorrhagic period and the period of confirmed glaucoma. During the first period the evident indication is to ascertain, if possible, the cause of the retinal extravasations and to treat the existing diathesis, whatever that may be, particular attention being paid to the two most probable factors determining the hemorrhages,—viz., changes in the composition of the blood and tissues of the blood-vessel walls and disturbances of the circulation. For this purpose we naturally turn to iodide and bromide of potassium, iron, bichloride of mercury, arsenic, quinine, ergot, cardiac sedatives, salines, and various mineral waters, according to the indications. Having some direct influence upon choroidal congestion, ergot and bromide of sodium should receive special mention. The diet is of much importance, and a regimen suited to a uric-acid diathesis, or positive gouty dyscrasia, will, in most instances, be advisable. Absolute rest for mind, eyes, and body is of paramount importance, and the use of tinted protective glasses is evidently indicated. Depletion from the temple by leeching is a valuable adjunct, and of marked service, or certainly a safe practice, is the twice-daily instillation of a solution of the sulphate of eserine ( $\frac{1}{4}$  grain to 1 fluidounce), to which a few grains of boric acid and one grain of cocaine may be added. Such careful and systematic medication may be the means of preventing rise of tension, and is, perhaps, one of the reasons why the complication is fortunately of comparatively rare occurrence.

If, however, in spite of treatment, or without it, glaucoma supervenes, and of an inflammatory type, the question of operative interference is difficult to decide, from the well-known fact that measures—e.g., iridectomy—usually productive of relief in primary glaucoma, in this disease only too often precipitate blindness by encouraging fresh hemorrhagic extravasations. Bourgon details the results of iridectomy in twenty-four cases, as sixteen failures and eleven enucleations, and in a circular letter addressed by Risley to a number of American ophthalmic surgeons, the opinions were in practical unanimity as to the in-

advisability of iridectomy. Posterior sclerotomy, on the whole, offers a more favorable outlook, although, as Hotz remarks, usually "no kind of operation will save the eye," and the relief of tension and pain following sclerotomy in most instances is transitory.

Risley's conclusions, after a thorough study of the whole subject, in so far as the management of the period of confirmed glaucoma is concerned, are found in the following quotation: Strong solutions of eserine, frequently repeated, local bleeding, and hot applications to the eyeball give partial but only transient relief. Full doses of hydrate of chloral, having the power to reduce tension, according to Stilling (an observation confirmed by the writer), should be exhibited. Pain and increased tension continuing, paracentesis corneæ may be tried as a temporary measure; and, finally, as a more radical means, sclerotomy or paracentesis of the vitreous chamber. If by the latter operations the tension is relieved and deepening of the anterior chamber is secured, a free anterior sclerotomy, or, if the iris is moderately healthy, a broad iridectomy, may be tried.\*

It will thus be seen that Risley, while leaning towards sclerotomy, is unwilling, in selected instances, entirely to abandon the use of iridectomy. He bases this opinion upon the reports of several cases in which iridectomy gave relief from pain and tension, saving the eyeball, although sight was lost. Necessarily, no surgeon would operate on a case of this character without carefully explaining the exact chances and obtaining consent, in case of failure to secure relief, to perform enucleation or one of its substitutes.

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#### PEROXIDE OF HYDROGEN IN MEMBRANOUS THROAT-AFFECTIONS.

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IN the *American Journal of the Medical Sciences* for November, 1893, Dr. Williams, of Boston, contributes a paper upon "The Differential Diagnosis and Treatment of Membranous Affections of the Throat." Under the head of "Treatment" he says, "Chlorate of potassium does not seem to be of service, and in excessive doses may do serious harm. Nitrate of silver does not penetrate deeply enough. Chromic acid is too active. Iodine and bromine are too irritating." The digestives have not succeeded in his hands in removing the membrane. Tincture of the chloride of iron is a useful, but by no means a specific remedy. It does more good when taken internally, probably, than

when locally applied. He finds that corrosive sublimate has an antiseptic rather than germicidal influence in this disease. Thus, while a solution of 1 to 10,000 may stop the spread of the membrane, it does not kill the bacilli. He finds that a solution of peroxide of hydrogen of between twelve and twenty-five volumes killed the bacilli in ten seconds, provided that the reaction was slightly acid; but it required a fifty-volume neutral solution of hydrogen peroxide to do the same work. He points out that the ordinary hydrogen peroxide as found on the market possesses a strength of seven to ten volumes; that some are neutral and others acid. The fact that acid solutions have been found more valuable than neutral ones is interesting, as it has generally been considered that those preparations of hydrogen peroxide possessing distinct acid properties were not therapeutically useful. As a result of his clinical and experimental work, Dr. Williams believes that the solutions of twenty-five to fifty volumes are of value not only through their germicidal influence, but also through their power of breaking up the membrane already formed. The drawbacks to the use of strong solutions of hydrogen peroxide consist in the fact that when acid they cause pain, which, however, lasts but a short time. Strong acidity is not needed. Half per cent. to one per cent. is sufficient. The other disadvantage is that these strong solutions have heretofore not been readily procured and they do not bear transportation well. Dr. Williams states that they can be had, however, by evaporating a ten-volume solution in an open dish over a water-bath until it is sufficiently concentrated. He also reminds us that it is a powerful bleaching agent, and of all substances with which it comes in contact. In many cases it is necessary to make the application every four hours during the night and more frequently during the daytime. The solutions are best applied by means of a swab, fine syringe, or, better still, a spray.

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## Reports on Therapeutic Progress.

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### TREATMENT OF RENAL INSUFFICIENCY.

This important subject is discussed in the *New York Medical Journal* by ROCHESTER.

The conclusions to be drawn from the cases he has seen as regards treatment are:

1. We should not try to stimulate into activity an organ that is inflamed or degenerated, by the use of drugs that excite functional ac-

tivity of such organ. In the case of the kidney, we should rarely, if ever, have recourse to stimulating diuretics, or to diuretics which, like digitalis, act by increasing the arterial pressure, until we have relieved the venous congestion by diaphoresis or catharsis, or both.

2. Attention to diet is of the utmost importance in these cases.

3. In order that the materials to be excreted by the kidney may come to that organ in the most unirritating form, the metabolic process should be carried to completion; this is to be accomplished by regular systematic exercise, which is to be obtained by massage when active exercise is not advisable, by inhalations of pure oxygen gas when it is evident that sufficient oxygen is not obtained from the air, and by the dilatation of the katabolic materials by drinking large amounts of distilled water, or one of the mildly alkaline waters, such as Bethesda, Poland, or Buffalo lithia water.

4. The anæmia that accompanies these cases should be met by the use of oxygen and iron.

5. As the symptoms indicative of this condition are the result of toxæmia which depends upon the non-elimination from the body of certain katabolic materials that should normally be carried off through the kidneys, and as these organs are in such condition that they cannot do their work, all other avenues of elimination should be opened up for the escape of these poisons. This is to be brought about by exciting the activity of the skin by means of hot-air or steam baths, accompanied and followed by vigorous massage, keeping the bowels open by means of salines and by washing away the contents of the colon, thus keeping the mucous membrane in a proper condition for excretion, with copious enemata of slightly alkaline water, occasionally followed by a high enema of 500 or 600 cubic centimetres of pure olive oil, as suggested by Fleiner.—*Berliner Klin. Wochenschrift*, 1893, Nos. 3 and 4.

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### OBESITY TREATED BY AN EXCLUSIVELY NITROGENOUS DIET AND COPIOUS LIBATIONS OF WARM WATER.

SAVILL gives an account of his treatment of cases of obesity in the *Lancet*.

A man, aged sixty-eight, was admitted to the Paddington Infirmary on September 21, 1891, on account of ulcer in the leg. He was about five feet ten inches in height and weighed twenty stone four and a half pounds. His girth was so great that it was necessary to get a special suit of clothes made for him, and he was quite unable to walk, chiefly by reason of his

bulk, but partly also because of stiffness of the hip-joint due to morbus coxæ senilis. There were also a suspicion of chronic Bright's disease and a history of gout.

He had formerly (from August, 1890, to February, 1891) been under the writer's treatment, on the same plan as the one about to be described, for obesity and ulcer of the leg. While in the infirmary on that occasion his ulcer had healed and his weight had been reduced from twenty-one stone to seventeen and a half stone; but a month or two after leaving his leg again became ulcerated and his bulk again began gradually to increase.

Stoutness had run in his father's family and his father had been as corpulent as himself, but his mother and her people were all small. As for the patient, he had lived an abstemious life, though he had been in the habit of drinking one or two pints of beer a day with his meals, and had worked hard as an engine-fitter all his life. He had been stout as a child, but at the age of twenty-one he weighed only twelve stone, and, though always rather bulky, had but recently been unable to work on account of his size.

He was at once put upon a diet consisting of one pound of cooked fish and one pound of cooked lean meat daily, with a pint of warm water sipped at intervals, as warm as he could comfortably drink it, every two hours. The fish and the meat were distributed into various meals, according to the taste of the patient, but no bread and vegetables, milk, or any other article were allowed. He was an intelligent man, and entered heartily into his treatment,—a most important factor in success. He managed to drink about five or six pints of warm water in the day. His weight began at once to fall steadily. Thus, on September 21 it was twenty stone four and a half pounds; on October 2, nineteen stone eight pounds; on November 18, eighteen stone four pounds; and on December 4, seventeen stone eight and a half pounds. About Christmas time his dietary was a little relaxed, and he immediately went up seven pounds, but by January 15 he was reduced again to seventeen stone one pound.

After about four months' treatment, in January, 1892, he began to rebel a little, and the diet was modified by the addition of two small slices of bread and butter with breakfast and tea, and the addition of milk and sugar to his tea in the morning and evening. Nevertheless, the weight still continued to diminish (February 7, sixteen stone seven pounds). On February 7 he returned to ordinary meat diet,

such as the other patients had, with the omission of potatoes. At first the weight went up a few pounds (sixteen stone ten and a half pounds), but then the downward course was resumed, and on March 21, 1892, he weighed sixteen stone six and a half pounds. He then left the infirmary to return to work, having lost nearly four stone in six months, during four months of which he was on a strictly nitrogenous diet, and for one and a half months of which he was on ordinary diet, without potatoes.

His ulcer was healed within a month of his admission, and he began to get up and about, taking as much exercise as the ward space allowed; and, although he took no medicine excepting an occasional aperient, the pain and stiffness of the hip-joint soon disappeared. He passed large quantities of urine of low specific gravity, which very frequently contained crystals of uric acid. Dr. Haig's valuable observations on the urine are appended. Once only it contained a trace of albumin (November 6, 1891). Subsequent observations show that, though he takes ordinary diet, avoiding beer, he keeps at about sixteen and a half stone and in good health. He continues to take draughts of warm water when circumstances allow.

The rationale of this treatment is apparently that the patient supplies the necessary hydrocarbons and carbohydrates, which are absent from the diet, from his own economy; in other words, he lives on his own fat. Dr. Lloyd suggested this treatment to the author. It is something like that adopted by Marienbad. It was certainly very successful in this case, for the man was not only thinner, but was in much better health in every way and able to resume work. The permanence of the improvement after resuming ordinary diet is a fact worthy of special attention.

It is useless to attempt the regimen without the hearty co-operation of the patient. In another case, weighing seventeen and a half stone, in the same ward as this patient, the same treatment failed because he would not carry out the dietary. The copious libations of warm water are probably of great importance, and the patient probably retains his decrease in weight owing to this avoidance of beer and the taking of warm water.

Dr. Haig says he hoped to discover why obese patients, when put on an exclusively animal diet, rarely suffer from attacks of gout, though in ordinary dietetics any excess in meat food has such a powerful influence in producing this disease.

The following are some of the results ob-

tained from an examination of the urine of the twenty-four hours ending 8 A.M. on December 21, 1891, when the patient was on the special diet and had been on it for three months. That of twelve hours of the day was dark amber and measured forty-four ounces; that of the night was pale amber and measured seventy-four ounces; the mixture—one hundred and eighteen ounces—was pale amber, free from deposit, of specific gravity 1012, and containing no albumin. This yielded 1.5 per cent. of urea (equal to 817 grains) and .04704 per cent. of uric acid (equal to 25.5 grains), giving a relation of uric acid to urea of 1 to 32. On examination on other occasions, between 800 and 900 grains of urea and about the same proportion to it of uric acid as that above given was found, and there was no evidence that he was retaining any large quantity of uric acid. His weight at that time was about seventeen stone twelve and a half pounds, so that his excretion of urea was about 3.4 grains per pound. An examination of the urine of the twenty-four hours ending February 10, 1892 (being the urine of the second day on ordinary diet), gave the following results: Day urine, thirty-four ounces; night urine, seventy-two ounces; together, one hundred and six ounces; pale amber in color; specific gravity 1010, and containing a trace of albumin; urea, .95 per cent. (equal to 465 grains); uric acid, .03696 per cent. (equal to 18 grains); relation of uric acid to urea, 1 to 26 (nearly). His weight is now sixteen stone seven pounds, and the urea is, therefore, equal to two grains per pound, and the excretion of uric acid has decidedly increased. The specific gravity of the urine was always low, and it was scanty by day and profuse at night. His pulse, whenever examined, was below 70 in rate and of distinctly high tension. It will be noted that 3.4 grains of urea per pound is just below the normal physiological quantity, and though, no doubt, something must be allowed for his adipose tissue, Haig has under his care a man of less than half his weight who is on a highly nitrogenous diet for diabetes, but who still probably takes less than hundred grains of urea, or about seven grains this man, yet he often passes upward of eight per pound; so that, even if it is admitted that the large quantity of fluid taken did to some extent interfere with digestion, and a further large allowance is made for adipose tissue, the urea was still very low, considering the diet. Even on the purely animal diet the acidity of the urine was low and he retained but very little uric acid; but had this same diet been given to a younger man without Bright's disease, and

with more active metabolism, the urea would have been more like eight to ten grains per pound, the acidity would have been higher and the uric-acid excretion much less (in relation, say, of 1 to 40 or 1 to 50). He would have retained and accumulated much more uric acid, and, as a result of this, would soon have suffered from gout. So far, then, as one can judge from the results in a single case, it is the extremely low metabolic activity in such patients that prevents their accumulating uric acid and suffering from gout. The patient under notice, if the history may be trusted, suffered pretty severely from gout in the feet in previous years, but when he became obese and unwieldy, and consequently unable to work, his metabolism, urea, and acidity rapidly fell, and he continually excreted an excess of uric acid from his joints in place of storing it in them; hence he lost his gout, but acquired uric acidæmia in its place, and this still further hampered metabolism and produced Bright's disease. So, when he came under observation, he was constantly excreting excess of urate and had no gout, and even the stimulus of the animal diet was insufficient to reverse the process or to cause a storage of urate and a relapse of his gout.

#### *A CASE OF POISONING FROM AN OVERDOSE OF CODEINE.*

In the *New York Medical Record*, SPRATLING details a case of codeine-poisoning.

Shortly after ten o'clock on the evening of June 8 the author was requested to see a young married woman who had taken an overdose of codeine. Immediately after dinner, about seven o'clock in the evening, she had taken sixteen  $\frac{1}{2}$ -grain pills, making eight grains altogether. She had suffered for some months from a painful disease, and had been ordered by her physician to take codeine in  $\frac{1}{4}$ -grain doses for the relief of pain and to overcome a persistent insomnia. Not deeming the  $\frac{1}{4}$ -grain pills of sufficient strength, the patient then procured from the druggist a vial labelled as containing one hundred  $\frac{1}{2}$ -grain codeine pills. Three hours before the author's visit she had swallowed sixteen of these, as she avowed, for the purpose of securing a good night's sleep. An hour later she experienced considerable nausea, and vomited a small quantity of semi-liquid matter. He found her awake, able to converse well, but extremely restless and irritable. She could not lie in one position, but constantly changed it by tossing, almost violently, from side to side of the bed. At frequent intervals she would manifest convulsive movements, involving the



entire voluntary muscular system. These movements were most marked in the upper extremities and the head. She suffered greatly from intense irritation of the skin over the entire body. This irritation was most annoying along the flexor surfaces of the forearms and on the back. She had an attendant rub her back so vigorously with a coarse towel that the skin in many places was broken. The surface of the body was warm and dry. The pupils were fixed in pin-point contraction. Respirations were 12 per minute. She complained of great thirst and an uncomfortable feeling of fulness in the head. She did not experience the pleasant effects following the exhibition of morphine. She frequently remarked that her "thoughts were going round and round." After the painful irritation of the skin had been relieved by sponging the body with solution of bicarbonate of sodium, she sank into a light doze, from which she would awake in a few minutes with a start. The skin was hyperæsthetic to a marked degree. She was subjected to the usual treatment for opium-poisoning, and in a few hours was much improved.

By noon on the following day she had entirely recovered from the effects of the drug in every way, save that considerable muscular weakness remained. We apparently have no fairly accurate knowledge as to what amount of this drug may be regarded as a fatal dose. In the latest edition of Wood's "Therapeutics" it is stated that "Robiquet, in a series of experiments, found that doses of .01 to .03 gramme (.15 to .46 grain) produced a feeling of contentment, calmed nervousness, and induced refreshing sleep, while .1 to .2 gramme (1.53 to 3.07 grains) caused deep sleep, followed by nausea and vomiting." Quoting further from the same author, he adds, "Dr. A. S. Myrtle records a case of severe poisoning by 4 grains of codeine. And Dr. D. Walsh reports serious poisoning by 8 grains of codeine."

*CLINICAL REMARKS ON CERTAIN  
CHANGES OBSERVED IN THE  
URINE IN MYXŒDEMA AFTER  
THE ADMINISTRATION OF  
GLYCERIN EXTRACT OF  
THYROID GLAND.*

DR. ORD and MR. WHITE publish in the *British Medical Journal* a careful clinical observation on the effect of thyroid extract upon the urinary secretion in myxœdema.

A patient suffering from myxœdema was admitted to St. Thomas's Hospital on April 19,

1893. After careful daily examination of the food and the urine, she began, on May 1, to take 20 drops of a glycerin extract of the thyroid body of the sheep daily. The dose was equivalent to a sixth part of the whole thyroid body of the sheep.

For a week previous to May 1 the patient had been placed on a diet carefully ordered, so that its elements should be as much as possible the same day by day. The particulars of this diet and its equivalent in chemical examination will be published subsequently. The same diet was maintained after the administration of the thyroid extract during the whole period of the treatment of the patient in hospital.

After the administration of the thyroid extract a marked change was observed both in the volume of urine passed and in the quantity of nitrogen excreted. An increase in the volume of urine is the first point to be noted. As regards the excretion of nitrogen, the quantity up to the time of the administration of the thyroid extract corresponded fairly with the amount of nitrogen taken in the food, being, as one would expect, slightly less. Bearing in mind this fact, that before treatment the nitrogen excreted in the urine was slightly less than that taken in the food, it is of importance to note that three days after the first administration of the thyroid extract the excretion of nitrogen in the urine exceeded the amount introduced in the food, and that this proportion, very much marked in the earlier days of treatment, was practically maintained so long as the patient was under observation.

The total nitrogenous excretion was determined, as well as the excretion of urea, in order to ascertain whether the nitrogen might be excreted in any form other than urea. The records show that the relation of total nitrogen to nitrogen as urea remained about the same as in normal urine, thus indicating that the nitrogen was still excreted chiefly as urea. It was also seen that the difference between organic matter and urea remained about the same during the continuance of the experiment, thus showing that, in addition to water, the increased excretion was urea or other nitrogenous matter. At the same time it is important to notice that the patient lost weight rather rapidly in the first week of treatment,—namely, from eight stone four and a half pounds to seven stone thirteen pounds, with a further but more gradual loss of three pounds. The temperature of the body was raised; before treatment it had been sub-normal, ranging from 96.6° to 98.6° F., ranging afterwards from 97.6° to 100° F., the maximum temperature being reached on the thir-

teenth day after treatment had begun. As regards the loss of weight, we have to take into account the fact that the patient, having previously a very dry skin, had free perspiration after the administration of the drug.

With regard to the excretion of inorganic matter, it had occurred to them that, with the increased excretion of urea and the associated rise of temperature, changes in the excretion of saline matters, such as occur in pyrexia, might be looked for. It appears, however, that in this case the excretion of the inorganic substances determined was very little affected by the thyroid treatment.

The acidity of the urine was observed to follow closely the variation in the quantity of phosphoric acid eliminated, thus being evidently due to acid sodium phosphate as in normal urine. It is to be regretted that the sulphates in the urine have not been determined, seeing that they might have shown whether the increased nitrogenous excretion might be referred to destruction of proteid substances or some other form of nitrogenous matter.

The writers present the following conclusions as the result of the treatment and observations in this case:

1. That the urine is increased in volume.
2. That the nitrogen excreted in the urine exceeds the total quantity of nitrogen in the food.
3. The phosphoric acid and chlorine elimination are practically unaffected.
4. That the increased nitrogenous excretion is chiefly in the form of urea.
5. That the body-weight is rapidly diminished.
6. That the temperature of the body is raised.

A chart is appended showing the changes in the weight of the body, the nitrogenous value of the food taken daily, and the excretion of nitrogen after treatment.

They propose, also, to publish later a full report of their observations, with the tables illustrating them.

#### THE THERAPEUTICS OF LUPUS VULGARIS.

HOFRATH D. VEIEL (*Berliner Klinische Wochenschrift*, No. 39) describes the manner in which he uses pyrogallol for the treatment of lupus vulgaris. The first treatment consists in the destruction of such lupoid tissue as is visible and can be felt. For this he chooses his method according to the locality and variety of the lupus, sometimes a mechanical treatment

(scarification, scraping off), sometimes a chemical one (caustic potash, or nitrate-of-silver pencil, or pyrogallol vaseline, ten per cent.), sometimes a thermic treatment (thermo-cautery, galvano-cautery). When the pyrogallol cannot be used alone from the first, he uses a bandage of ten per cent. pyrogallol vaseline salve spread on lint. The first bandage is left for two days; from the third day on the same dressing is renewed once a day. In this manner he seeks fully to destroy any lupus particles which may have escaped the first treatment. This is quickly accomplished. It is advisable to protect the surrounding healthy skin by a plaster (for example, of zinc benzol salve on mull) from the action of the pyrogallol, which produces a very painful irritation.

On the fourth or fifth day the application of the strong pyrogallol is usually exceedingly painful, so that in many cases morphine injections become necessary. An addition of cocaine to the salve did not prevent the pain. The pain is most severe upon the entrance of air when the bandage is moved or opened. The change of bandage should be made as quickly as possible and very carefully applied. When this pain occurs it is time to leave off the strong salve and take another course. Formerly the healing was obtained under vaseline or iodoform, but Veiel now uses a weaker pyrogallol salve, which does destroy the lupoid tissue, but does not prevent the formation of healthy granulations. The two-per-cent. salve usually fulfils these conditions. If this is too strong, a one-per-cent. may be used, or even a .5- or .2-per-cent. may be used as soon as the granulated surface is formed.

The healing is usually very slow by this method, but the scars are smoother and prettier than by any other method of treatment. Therefore he uses the pyrogallol when the face or any part is affected, where a pretty scar is desirable. When this is no object, he uses transplantation after Thiersch's method as soon as the smooth granulated surface is formed.

The urine must be constantly watched during the treatment, and the use of pyrogallol at once stopped if albuminuria or hæmaturia occurs. Veiel has never in all the cases treated seen any permanent action upon the kidneys or general health, no doubt because the pyrogallol is used on comparatively small surfaces.

The good results in tuberculosis of the skin led him to try the pyrogallol also for that of the bones. In tuberculosis of the hollow bones it was without result, but cured four cases of caries of the tarsal bone. They were treated during two weeks with the ten-per-cent, and then until

cured with two-per-cent. salve. The cure took from eight to thirteen weeks.

He used a .5-per-cent. watery solution of pyrogallol for a girl who had lupus of the conjunctiva, dropping it in the eye daily. She has now been well for a year.

#### THE TREATMENT OF ACTINOMYCOSIS OF THE JAW.

A new case showing the efficiency of potassium iodide in the treatment of actinomycosis has been recorded quite recently by F. BUZZI and B. GALLI-VALERIO (*Nouveaux Remèdes; Journ. de Médecine de Paris*). The case occurred in a young man who contracted the disease while farming. The malady began by a localized pruritus on the external surface of the gums, invading afterwards especially the gum of the last right superior molar tooth. The patient sought to relieve the itching by scratching with a straw. The gum became tumefied, this tumefaction invading little by little the parotid and masseteric regions, all of the right cheek, the eyelids, the mastoid region, and the right half side of the neck just over the clavicle. The real nature of the disorder was not recognized at first. At the beginning the tumor was not painful and presented several fluctuating points. These purulent foci were opened; but, notwithstanding the cleansing of the walls of the abscesses and the irrigations of bichloride solutions, the tumor did not subside and the suppuration continued. Lancinating pains supervened over the neck and back of the head, and there was a slight feverish reaction. Examination of the pus afterwards showed the case to be one of actinomycosis. The patient was, therefore, put under iodide of potassium, in daily doses of 2 grammes. After a few days amelioration was noticeable. The fistulous openings began to close, tumefaction was diminished, and the pain disappeared. In three months more a complete cure was established.

#### A NEW TREATMENT FOR EPILEPSY.

It is believed that a prolonged treatment by opiates renders the organism extremely susceptible to the action of the bromides. This in mind, FLECHSIG, of Leipsic, has administered opium at the beginning of the treatment of epilepsy, in ascending quantities of from 15 centigrammes to 75 centigrammes, and even 1.05 grammes, in three doses, during six consecutive weeks. About this time he has

stopped abruptly the administration of the drug, and prescribed then, during a period of about two months, bromide of potassium in doses of 7.50 grammes, gradually reducing the amount to 2 grammes per day. The convulsive seizures disappeared as if by magic on the suspension of the opium and the beginning of the ingestion of the bromide of potassium. This instantaneous effect was produced in two patients of the author, in whom all other medication employed for several years had utterly failed to do any good.—*Gaz. Méd. de Liège; Journ. de Méd. de Paris*.

#### CHLOROFORM NOT CONTRAINDICATED IN KIDNEY-DISEASE.

An interesting case of albuminuria is recorded by POITOU-DU-PLESSY (*Journ. de Médecine de Paris*), in which chloroform produced no evil effects. A woman in labor, and who had previously showed unmistakable evidence of albuminuria (from .40 to 1.30 grammes of albumin in the litre of urine), had to be anesthetized in order to subdue the intense pains and the over-excited nervous system. A mixture of bromide of ethyl and chloroform was employed for the anesthesia, the patient getting in all about twenty-five grammes of the ethyl bromide and eighty grammes of chloroform. The anesthesia was complete, and the woman safely delivered of twins. The first analysis of the urine, soon after the confinement, showed that the albumin had almost entirely disappeared, only traces of it being detected. The author refers also to another case,—this one evidently of cystitis,—occurring in a man seventy-seven years of age, who was operated on for stone in the bladder, and in whom the chloroform anesthesia lasted for fully one hundred and ten minutes. No untoward after-effects were observed. He believes, finally, that chloroform, judiciously and methodically administered, exercises no noxious influence on the kidneys, and that no fear should be entertained in regard to its employment in uræmic convulsions where we wish to combat the medullary excitability. Bromide of ethyl he likewise believes exercises a more pronounced action on the medulla and acts even more rapidly than chloroform; therefore, he considers advantageous the administration of a mixture of the two agents for anæsthetic purposes.

#### THE VALUE OF ALCOHOL IN PNEUMONIA.

In the *Boston Medical and Surgical Journal* an interesting account of a discussion on this topic is given.

At the Société de Thérapeutique, session of May 24, 1893, the subject of the therapeutic value of alcohol in pneumonia was again discussed. While the necessity of alcohol in the asthenic forms was admitted by all, the general sentiment of the authorities present was in favor of giving alcohol, as such, in its purity, sufficiently diluted. The old notion that old wines, whiskeys, etc., were to be preferred because of the "mellowing" properties conferred by age was condemned as a delusion. Such liquors were declared to be much more irritant to the stomach and less certain in their general supporting effects than pure ethyl alcohol, deprived of aroma.

One eminent speaker commended the alcohol of rice as being exceptionally free from fusel oil and other impurities.

We are told that the best French cognac is, "with few exceptions, nothing but the alcohol of beets, of poor molasses, changed and colored by the fabricator by the addition of infusion of tea and various essences which give it bouquet." Such brandies are almost sure to contain methyl alcohol in quantity certain, when freely administered, to do harm to the patient.

M. Huchard, who is an enthusiastic advocate of the employment of digitalis in the pneumonia of influenza, thinks alcohol the remedy *par excellence* of pneumonia by reason of its "dynamogenous action." There was much speculation as to how alcohol does good. M. Bovet declared somewhat vaguely that "by its dynamogenous action it supports the patient; by its reducing action it modifies the elements of the blood, which, rendered more fluid, undergoes an osmotic acceleration which expresses itself by the progressive decongestion of the pulmonary parenchyma." He also thought that "by its calorigenous reaction it develops a considerable number of calorics which cannot but have an influence on the evolution of the infectious elements, by this fact impeded in their toxic action and possibly destroyed. "What tends to prove this," he says, "is that, after the absorption of the alcohol, we find in the extractive matters of pneumonia patients an abnormal proportion of waste matters of the creatinic series, which are known to be endowed with a remarkable toxicity."

But, apart from such speculations, the best proof of the value of alcohol in pneumonia was affirmed to be clinical experience.

The combination of pure ethyl alcohol with digitalis constitutes, in the estimation of Huchard, the ideal treatment of pneumonia when any active treatment is needed. He gives the digitalis in the form of its active

principle—the crystallized digitalin—in the daily dose of 1 milligramme by mouth.

It is a little singular that no allusion was made at this meeting to the therapeutic efficacy of strychnine in acute croupous pneumonia, a drug which is coming more and more into favor generally as a cardiac tonic in this disease.

#### RECTAL INJECTION OF SALINE SOLUTION IN A CASE OF SEVERE HEMORRHAGE DURING ABORTION.

In the *Lancet*, NICHOLSON details a case benefited by saline injections by the rectum after severe hemorrhage. He was called to see a woman, aged thirty, who had just aborted, the process being accompanied by very severe hemorrhage, which had nearly ceased on his arrival. The patient was the mother of three children born alive; all the labors had been accompanied by severe loss. So great had been the hemorrhage in her last confinement that her medical attendant had warned her against the risk of a further increase in her family. The patient was found in a deplorable condition from the acute anæmia. The pulse was 140 to 150, small, running, and occasionally irregular; the cardiac sounds were faint and the apex-beat imperceptible. She was extremely pallid and restless, and could not get enough air. She complained of nausea, with constant retching and vomiting of small quantities of mucus. Every few minutes she became thirsty and then faint, and was unconscious at times. Notwithstanding treatment by raising the foot of the bed, bandaging the legs, hypodermic injection of brandy, etc., the faintness, sickness, and feeble pulse continued, the patient becoming even more prostrate. After an hour the author determined to try the effect of a chloride of sodium enema, one drachm to the pint of water, at the temperature of 100° F. The patient having had severe diarrhoea, he was afraid the injection would not be retained, but this was successfully accomplished by holding a pad over the anus for a few minutes. The effect was extremely beneficial, for within twenty minutes the pulse fell to 120, the color improved, the sickness and faintness almost entirely disappeared, and she expressed herself as feeling much better and more comfortable. In half an hour she was able to take and keep down a small quantity of beef extract. Shortly after she had a little sleep. The patient made an excellent recovery and was able to be out about a month later. The saline enema in all probability saved the patient's life.

*THE ETIOLOGY AND THERAPEUTICS OF ALCOHOLIC INEBRIETY.*

MASON contributes to the August number of the *Brooklyn Medical Journal* an article upon this subject, and in regard to the therapeutics of these cases believes that much can be done. He points out that Luton, of Rheims, Belgium, was the first to use strychnine in alcoholism; then the Russians used it largely, and it was known as the "Russian treatment;" and, finally, the Americans adopted its use in such cases.

Strychnine has proved serviceable as both abortive and curative in acute alcoholic delirium, as well as useful in the more chronic forms of alcoholism. It seems to be tolerated in such cases. In cases of alcoholic poisoning under normal conditions we have no record of the value of strychnine as an antidote; interesting experiments might be made on the lower animals with the view of determining this point. Strychnine is an excellent cardiac tonic and one of the best respiratory stimulants, and might be used in general medicine in cases in which alcohol is oftentimes prescribed.

Oxide of zinc, during the past twenty years, has been used with advantage in cases of chronic alcoholic intoxication. This drug was largely brought to the notice of the profession by Dr. W. Marcet, of London, who had an extensive hospital and dispensary practice, especially in diseases of the nervous system; and as he found zinc of value in various chronic disorders of the nervous system, he used it also in cases of chronic alcoholism. His observations, published in a small work entitled "Chronic Alcoholic Intoxication," are an extremely valuable addition to the literature of alcoholism.

Quinine has been used more particularly in the later or convalescent period of the treatment of alcoholism.

The so-called "Red Cinchona Cure" for a time interested the public. Rational medicine does not recognize any special drug or specific remedy as a universal cure for inebriety, nor does clinical experience form any basis for such a claim. From the very nature of the case, such a remedy would be impossible. The etiology of inebriety is dependent on such a variety of causes, and its environments and complications are so numerous, that any one remedy could not fulfil all, or even meet the more important, of these conditions. However valuable drugs may be to meet certain indications in the various conditions incident to inebriety, we believe that, so far as

the curative treatment of inebriety is concerned, drugs must assume a secondary place, valuable as they may be in their respective spheres.

In the treatment of the alcohol habit we place, first, restraint and seclusion in a special asylum for a definite period, and total abstinence during this period.

In a few words, concisely expressed, this statement includes the plan now adopted by the leading asylums of this country and of Europe for the recovery of the inebriate. It involves restraint (legal, if need be), seclusion, a special institution in which all the latest and best methods of dealing with the inebriate are procurable, a sufficient period in which to apply these measures, and, we need hardly add, a long period of total abstinence from all alcoholic liquors. Diet, rest, recreation, hygienic surroundings, and the exhibition of appropriate drugs are, of course, all included in the above plan.

The causes of degeneration having been removed and the factors of regeneration brought into action, new formation of nerve, muscle, and tissue must supplant degenerated tissue, if, haply, organic disease has not resulted in irreparable injury.

We have hinted at an hysterical element in the history of inebriety. The inebriate, whatever may be his condition, is largely influenced by his surroundings; hence, as almost in no other disease, must we recognize the value of psycho-therapeutic agencies, hitherto used by the charlatan, but recently recognized and practised by leading neurologists, as of value in their specialty.

In the light of such an historical element in the clinical history of inebriety, we can readily account for the apparent success of the so-called temperance movements that sweep over communities periodically and effect many apparent cures, or rather, in the language of the day, reformations. Such an element will also explain why, after such a tidal wave of excitement, relapses take place oftentimes in large numbers, and the period of excitement is followed by a period of reaction.

The occurrence of relapses is readily accounted for by the fact that the stimulus of the period of excitement buoys up the inebriate for the time being, during which strong mental emotion is a powerful factor. He is keyed up, as it were, for the time, and sustained by a moral stimulus. When this is withdrawn, reaction, followed by corresponding depression, sets in, and the old method of stimulation is again imperatively demanded and yielded to.

Why some inebriates go through such a period of excitement and do not relapse, and why others do, can be accounted for by the fact that the former are in a reasonable degree of physical health, and are not burdened, dragged down, and handicapped either by disease that is non-alcoholic or that is the result of alcoholic degeneration. The inebriates so affected are not influenced, or, if at all, only temporarily, by the so-called "temperance revivals" that appear and disappear with almost stated regularity in large and small communities, and we must add, do good, but only in the channel indicated.

It is by operating through this hysterical feature of inebriety that charlatanism may effect a temporary, possibly a permanent, success in a certain class of cases.

A physician observed to the writer that he had visited many asylums for the cure of the inebriate, and that when the medical superintendents were men of strong will power and personal magnetism, as he expressed it, more cures were effected than when the reverse was true. When the inebriety is due largely to neurasthenia, or in cases where the hysterical element largely preponderates, we believe psycho-therapeutic agencies, or even those that appeal to purely mental conditions, will be of service, but they will not cure a cirrhotic liver, lung, or kidney, or remove the physical causes upon which the inebriety may depend. In addition to those measures that appeal to the higher moral nature, there ought also to be combined such as meet certain intelligent wants. To this end all reasonable amusements, entertainments, and especially such occupations as will interest the person and keep him busy, should be encouraged, if not made compulsory.

Incidentally may be mentioned hypnotism as having been used especially by French physicians, with some benefit in cases of chronic alcoholism. The author has had no personal experience with it.

The therapeutics of inebriety is a new field as yet not fairly occupied, but we believe that the only true road to successful treatment will be along the lines we have indicated,—that is, a knowledge of the underlying causes and the use of such therapeutic agencies as will best remove these.

#### *EPILEPSY CURED BY THE REMOVAL OF PERIPHERAL IRRITATION.*

In the *Edinburgh Medical Journal* for July, 1893, MILLER records the case of a man, aged thirty-two, who was suffering from epileptic fits

preceded by contraction of the flexor muscles of the right arm.

Patient said that five years ago he got a fright, having been arrested by the police in mistake for another person, and that he has been very nervous since then. Ten months ago patient had a quarrel with his parents, and left their house. He was in a state of excitement for some weeks after this, and worked very hard at his carpenter's bench to relieve his feelings. About a month after the quarrel he noticed a contraction in the palm of the right hand. About this time he began to have fits.

Patient gives a good account of his personal history and habits. His family history is good.

Patient looks a strong, healthy man, but is rather nervous and excitable. The right arm fully as muscular as the left, though he uses the latter rather more. Patient says that the right arm does not feel as strong as the left. There is also a "peculiar" feeling in it which he cannot describe. There is slight contraction of the slips of the palmar fascia going to the ring and little fingers of the right hand, felt most distinctly at the transverse fold of the palm. Patient has a contracted prepuce which closely fits the glans penis. He has also a tendency to inguinal hernia on both sides. (Open inguinal canal probably congenital.)

The fits take place mostly at night, after an emission, and about once a fortnight.

If the patient is awake when the fit is coming on he feels dull. The fingers of the right hand become flexed, and the thumb over them; the arm then flexes till the closed hand touches the right shoulder. The right leg then becomes extended and rigid. The toes are not affected. The respiration becomes rapid, patient hears his heart beating violently, and then becomes unconscious.

When he regains consciousness (which is in about an hour) he finds his mouth covered with saliva, he is very weak and drowsy, and usually falls into a dull, heavy sleep. He has usually to take a rest for a day or two after each attack.

Patient says that if, when he feels an attack coming on, he can have his fingers held out straight and his leg firmly flexed, the fit is checked. At such times he feels his muscles working, but nothing more happens. He says also that if he sleeps on his left side he has no fits.

On December 6, chloroform having been administered, Mr. Miller slit up the prepuce and also forcibly stretched the contracted

palmar fascia, and then put on a splint. Patient was also ordered full doses of potassium bromide. He had a slight fit on December 9. Patient went home on January 16, 1892, having had no more fits. He had discontinued the bromide of potassium, but wore a posterior splint on the right hand to keep the ring and little fingers extended.

Patient returned some months after and reported himself quite well.

This case seems to show an interesting sequence of events. The man was arrested on suspicion and shut up in jail for a night, having been mistaken, he says, for another person. This gave him a great fright, and ever since then he has been nervous and excitable. Ten months before the commencement of the fits he had a quarrel with his parents and left their house. He was much excited at this time, and remained in a state of excitement for two or three weeks, during which time he worked very hard to relieve his feelings. Being a carpenter, the nature of his work obliged him to use his right hand a great deal, and at the end of this period he noticed for the first time a hardness in the palm of the right hand and a contraction of the ring and little fingers. About the same time he had his first fit one day when putting on his coat. After that he had recurring epileptic fits about once a fortnight for nine months, occurring sometimes at night after an emission, sometimes without this association, but always commencing with flexion of the ring and little fingers of the right hand. Once or twice the fits had been arrested by some one forcibly preventing the flexion of the fingers.

Palmar fascia contraction affecting the ring and little fingers was ascertained to exist in the right hand, as also a well-marked phimosis.

The contracted prepuce was slit up, and the contracted palmar fascia was forcibly stretched and ruptured, so that not only was the contraction rectified, but the palm of the hand felt quite soft and natural.

After the operation the patient had one well-marked epileptic fit, and then no more. At the operation the hand was bandaged to a splint so very tightly that the patient complained of the constriction as very painful and irksome. This may have caused the one fit. After the first night the splint was put on more lightly.

Epilepsy from peripheral irritation is not uncommon. The above case is evidently an example of this, whether the exciting cause was the palmar contraction or the phimosis.

Miller has seen a well-marked example of epileptic fits due to phimosis. After circum-

cision the fits ceased for a time, but returned. The operation had been performed by the thermo-cautery, which at the time was being used for everything (tracheotomy among the rest); marked contraction of the cicatrix occurred (as might have been expected), and paraphimosis resulted. He cut the constriction; the fits again ceased, and have never returned, so far as known.

The author states that he has never seen a case in which palmar fascia contraction was the cause of epilepsy before, but considers that the one recorded is an example.

#### A CASE OF PARALDEHYDE HABIT.

In the *Edinburgh Medical Journal*, ELKINS records such a case. After detailing it at length, he gives the following summary concerning it:

It will be noticed that many of the bodily and mental symptoms related above, with some notable exceptions, such as the extreme emaciation, the marked effect upon the heart's action, and the abnormally large appetite, are similar to those found in delirium tremens; and, from the chemical relationship of alcohol and paraldehyde, this is what one might expect.

Not knowing what might be the effect upon such a weak subject, after such long use, of suddenly stopping the drug, it was intended to diminish the dose gradually, but the patient's mental condition prevented this arrangement from being carried out. It is possible that the more acute mental condition after admission to the asylum may have been due to the sudden deprivation of the long-used hypnotic. It is doubtful, in the treatment, how much credit should be given to the sulphonal, for it may be that a crisis was just about to take place when the drug was prescribed.

There was great emaciation; anæmia; slight rise of temperature in the evenings.

The heart's action was weak and irregular; pulse intermittent and soft; palpitation.

Stomach derangement, especially flatulence; costiveness; bulimia.

Breath smelt of paraldehyde.

Motor symptoms: General muscular weakness; general tremulousness, especially in tongue, facial muscles, and hands; gait feeble and unsteady; general restlessness. Sensory symptoms: "Strange feelings" running through body. Mental symptoms: Insomnia; great mental anxiety and agitation; discontent; unreasonableness; mental confusion; mental excitement; temporary loss of memory and incoherence of speech; shouting; tendency to

strip himself; hallucinations of sight (he saw "strange beasts"); hallucinations of hearing (he heard his death would appear in to-morrow's paper; he heard his wife had said she wished he were dead); delusions (that he was being poisoned; that his milk was drugged with laudanum; that a woman was in his bed, preventing him from occupying it; that people were tormenting him; that the doctors meant to kill him; that the house was on fire; that harm was about to happen to him). It will be noticed that the hallucinations of sight and hearing and the delusions were all of an unpleasant kind.

The treatment lasted about three months.

#### *THERAPEUTIC VALUE OF SALOL IN CHOLERA DIARRHŒA.*

M. Molkowitsch (*Therapeutische Monatshefte*, September, 1893) writes of his experiences with salol in choleraic diarrhœa which he gained in Nioching-Novgorod, Russia, in the summer of 1892. He analyzes one hundred cases to show the length of time which elapses between the occurrence of diarrhœa and the appearance of general symptoms of cholera. Excepting in ten cases, in which the time was only from one and a half to six hours, the interval ranged from six hours to a few weeks. From this fact he assumes that ninety per cent. of the patients, with the greatest probability, could have been rescued if from the very first appearance of the diarrhœa they had received the necessary medical attention; that is to say, if the cholera bacilli in the bowel had been rendered harmless before they had had time to develop the peculiar poison to which the general symptoms of the disease are attributed.

Molkowitsch treated nearly two hundred cases of diarrhœa with salol. He does not assert that they were all choleraic, though he believes they nearly all were. The diarrhœa lasted from a few hours to several days, generally from one to three days. In these cases the stools at first were partly solid, but subsequently watery. In a certain number (about twenty per cent. of the whole number of cases) the evacuations were accompanied with vomiting. Some of the cases subsequently to the beginning of treatment showed symptoms of cholera-poisoning.

Salol was used in all cases. The first dose to adults was 30 grains, but old people and those of weak constitution received only 15 grains. The three following doses of 15 grains he usually gave every three hours, and the later ones every four or five hours. Often the first two to

four powders of 15 grains were given every two hours, but the following ones every four hours. In a word, in the first few days patients received about 8 grammes (2 drachms), and in exceptional cases 10 grammes (2½ drachms). If the diarrhœa ceased and the patients felt neither weakness and nausea nor abdominal pain, and were comfortable, the powders were given less frequently,—every four, then every six hours. Usually the evacuations became less frequent within the first twelve hours, and the stools improved in character. If the patient rejected the first powder, a second was given, followed by hot tea.

In addition to the salol medication, patients were usually kept in bed, warmly covered; for pain, hot applications were employed and hot tea with citron given.

With the exception of dizziness and roaring in the ears, he never observed disagreeable symptoms following the use of salol. He regards the fear of carbolic-acid poisoning from salol as unfounded.

If after his treatment the diarrhœa did not cease in two days, the only cause was a failure to carry out his instructions as to diet. He never was compelled to use morphine but once, and then to relieve pain.

#### *CURE OF PLEURITIS, ESPECIALLY VERY ACUTE PLEURITIS.*

DR. AUFRECHT (*Therapeutische Monatshefte*, September, 1893) thinks the good results obtained in recent years in the treatment of pleurisy depend in great part upon the use of salicylic acid, of which he first wrote in 1883. His subsequent experience strengthens his earlier recommendation. But salicylic acid, not salicylate of sodium, must be used. The salicylate is weaker and produces marked secondary effects. When the pure acid is given in wafers, patients must always be admonished to follow the dose with a copious draught of water, in order to prevent a disagreeable burning feeling in the stomach.

Aufrecht has adopted the following modification of his former method of giving the salicylic acid: If in the first eight days no diminution of the exudate occurs, do not conclude that the salicylic acid has proved useless, but stop it for a day or two, and then begin again the dose of 6 grammes (90 grains) a day, in divided doses of 1 gramme, and so continue the treatment for several days, with interruptions of a day or two. Aufrecht adds that he has repeatedly found the same method of administration successful in obstinate rheumatic fever.



The best results in the treatment of pleurisy are obtained in cases in which the effusion has rapidly developed and is extensive, and in which the salicylic-acid treatment has been instituted as early as possible.

The author discusses the mode of action of salicylic acid, but reaches no positive conclusions. It is not beneficial in all cases, particularly not in effusions secondary to tumors of the mediastinum and lung, carcinoma or tuberculosis of the pleura, and in effusions of long standing.

As soon as the salicylic-acid treatment proves ineffective, the fluid should be withdrawn by aspiration. Fever is not a contraindication to the operation; on the contrary, the earlier the operation is performed the sooner will the remainder of the exudate be absorbed. The patient should lie upon his back, and Aufrecht selects for the point of puncture the fourth or fifth intercostal space between the anterior and posterior axillary lines. After the operation, patients, without exception, according to their age, receive from  $\frac{1}{6}$  to  $\frac{1}{4}$  grain of morphine to allay the cough which ensues from expansion of the lungs. Subsequently a drachm of salicylic acid, on the average, is given daily for several days.

Fraentzel was the first to call attention to a group of cases in which the pleurisy sets in suddenly with violent chill, high fever, and extensive effusion, which rapidly becomes purulent. Such cases have died hitherto, but Aufrecht reports two which were saved by prompt resection of the ribs.

#### THE TREATMENT OF PNEUMONIA.

This constantly-recurring topic of the treatment of pneumonia shows how the profession feel that in this disease we are often disheartened by our results. In the *Boston Medical and Surgical Journal*, SHATTUCK points out that no method of aborting the disease which has yet been proposed has made good its claims. Pneumonia, like typhoid fever, may abort spontaneously, but we cannot make it do so. Still, it seems that the method of Petresco, of Bucharest, is worthy of trial. Since 1883 he has treated seven hundred and fifty-five cases of pneumonia with very large doses of digitalis from the time they first came under observation. He gives for two or three days a strong infusion, and claims to be able to cut early cases short and to influence very favorably more advanced cases. His mortality now is only 1.22 per cent. He gives from 1 to 2 drachms of the leaves daily, the equivalent of

one to two ounces of our tincture. In like manner we have had no distinctly curative treatment, though we are encouraged to hope that the injection of immune blood-serum may prove to be such after further trial. In short, our efforts are at present confined to promoting the comfort of the patient and conserving his forces in every way to enable him to outlive the self-limited disease. This in itself may be much.

For the better application of this general principle it will be more convenient to divide the disease into stages, remembering always that these divisions are arbitrary, and that nature does not seem to feel herself bound strictly to abide by them. Patients very rarely succumb to the stage of invasion or preliminary congestion of the lung with active implication of the pleura. The danger here is not of dying; it is rather of loss of strength, which may be sorely needed later. The indication, therefore, in the ordinary case is to relieve the pain, to put the patient to bed and freely open the bowels, just as the mariner prepares his ship for an impending hurricane. The severity of the pain and any known or ascertainable peculiarity of the patient will decide the character and amount of the means for its relief. In the early days, at least, there can be no question of the safety of morphine, which should be used freely and frequently, hypodermically. Restlessness and an excited nervous system call for morphine nearly as loudly as does pain. Dyspnoea in the average case is at this stage due far more to the pleuritic pain than to state of the lung. But now and then we see a case in which so much lung-tissue is so rapidly invaded that the heart finds it difficult to adjust itself to the changed condition, and greatly oppressed breathing results. In such a case nothing gives such prompt relief as venesection, the freedom of which is to be proportioned to the age and vigor of the patient and its effect on the symptoms. With the veratrum viride treatment of the Philadelphia school the author has no personal experience. If internal antipyretics are to be used at all in pneumonia, it is only during the first stage that they are admissible. Even the best of them is somewhat depressing to the heart.

During the prevalence of the old doctrine of the nature of pneumonia and of inflammation, treatment was naturally addressed to the diseased organ, and antiphlogistics were used externally and internally. We now recognize the fact—or believe it to be a fact—that the cause of death in the second stage is rarely asphyxia as a result of the amount of lung involved. The loss of function of a portion of

the lung plays in most cases a rôle which is quite subordinate to that of cardiac exhaustion, dependent probably on the influence of toxins on the innervation of the heart rather than on changes in the myocardium. That it is mainly a toxæmia which weakens the heart, and not simply the mechanically-increased resistance in the right chambers, seems to be proved by the great fall in the pulse, as well as the breathing, coincident with crisis, although the physical signs over the affected lung area may show no appreciable change.

It is, then, the maintenance of nerve-force which we must try to secure. This means the avoidance of every unnecessary fatigue and the administration of the largest amount of the most nutritious liquid food which can be digested, with free ventilation of the apartment. It seems that the poultice and the envelopment of the chest in cotton or wool are relics of the old pathology. The poultice is the worse, as its frequent change involves notable fatigue and its weight is not insignificant. The author warmly recommends plenty of fresh air and sunshine. Morphine should be used more freely in the second stage than is customary. Here it is not called for by pain so much as by restlessness, cough, and sleeplessness. In any given case we must try to estimate the proportion of danger from respiratory failure. The smaller this danger the more freely can we use morphine, which will do more good in resting the nervous system than harm in other ways; and even in cases where the danger of respiratory failure cannot be disregarded, but morphine is indicated on other grounds, the inhalation of oxygen enables us to give morphine when we might otherwise feel compelled to withhold it. The writer does not recommend oxygen treatment, having in a considerable experience seen only one case—that of a Harvard student—where it gave marked relief, and even here the patient's age should have insured recovery. Our experience with this gas is now sufficient to enable us to estimate its value better and to use it more intelligently than a few years ago. Physiologists kept it out of use longer than we should have allowed them to do, saying that the consumption of oxygen is no greater when the pure gas is inhaled than it is under ordinary conditions. Even if this is true of the well, it does not follow that it is also true of the sick. It is probable that to-day clinicians are agreed that oxygen may be useful when a sufficient amount of air to arterialize the blood is prevented from reaching the alveoli, a condition which is present in some cases of pneumonia, as the result of

excessive secretion in the bronchial tubes in combination with the lung consolidation. Cyanosis, therefore, is the best single indication for oxygen. In such cases it should be used early and as freely as the purse of the patient will allow. Unfortunately, it is still a very expensive remedy; but its usefulness is wider than would appear from the above. Shattuck has seen refreshment, quieter respiration, a fuller pulse, and diminished restlessness, perhaps sleep, follow oxygen, even where cyanosis was absent or slight. Perhaps the gas acts as an aid in the combustion of toxins, all compounds of unstable character. The other chief means of stimulating the flagging heart, as reflected in the pulse and the character of the sounds, are alcohol, strychnine, cocaine, digitalis, and other heart tonics. Alcohol should be mentioned as very useful when the indications for its employment are present. Strychnine has grown in favor of late years, and justly. It is best given hypodermically, and, in severe cases, to the limit of toleration,  $\frac{1}{10}$  to  $\frac{1}{20}$  grain every three or four hours. H. C. Wood speaks highly of cocaine as an adjuvant to strychnine.

All writers advise and all practitioners use digitalis or one of its congeners, if there are any indications of a failing heart. The writer has used it constantly, but the rationale of its usefulness is not clear as it is ordinarily given. Perhaps we do not use it in large enough doses. It should probably be used hypodermically more than we do. He has seen this year prompt and distinct effect in several cases follow hypodermics of 30 minims of the tincture. Petresco's results are confirmatory of the idea that our doses of digitalis are often insufficient.

With the cold bath and cold wet pack, as remedies against high fever, delirium, and other nervous symptoms, the author has but slight personal acquaintance. A period of the disease which we all recognize as one of much danger in some cases is that immediately following the crisis. Exhaustion or collapse at this time calls for rapid stimulation; alcohol and ammonia internally, heat to the surface, brandy and ether under the skin.

In cases terminating by lysis, and in delayed resolution, a supporting treatment is to be carried out, according to the indications presented by the case in hand. The frequency of empyema as a sequel to pneumonia is never to be forgotten, if for no other than a therapeutic reason.

Lépine has recently employed with success injections into the thighs or arms of oil of tur-

pentine, when he feared that gray was passing over into yellow hepatization. Fochier first suggested and practised this method in puerperal septicæmia, having noticed that improvement took place when a focus of pus was established. The turpentine produces an abscess,—“of fixation,” Fochier terms it,—which can be opened later. Dieulafoy and Bard have each practised this method in pneumonia, with recovery in both cases. Others in France have also used it a few times.

In three desperate cases in the author's service at the Massachusetts Hospital, last winter, he had turpentine injected, in one case on the ninth, in two on the seventh day of the disease. All three died, as seemed certain they would, whatever was done or not done.

For therapeutic purposes, cases of pneumonia may be divided into three classes: first in frequency are those cases which will recover under any treatment or no treatment, unless they are grossly mismanaged; second, those which will die in spite of any and all treatment known at present; third, those in which judicious treatment may turn the scale.

Our object is constantly to strive to enlarge the third class at the expense of the second. Thus far our efforts have been unsuccessful enough. One method of curative treatment has been recently introduced which can claim an encouraging though limited success in practice, as well as foundation in analogy,—with tetanus, for instance. Only one case has been reported thus treated in this country, but it would seem our duty to lose no further time, and Shattuck proposes to test the method in his wards next autumn and winter.

He refers to the injection of blood-serum from a human being who has recently passed the crisis of pneumonia, or blood-serum or fluid derived from animals rendered immune to experimental pneumonia by the injection of pneumococcus cultures. The purpose in this method is to induce the crisis artificially, and that of thirty-nine cases thus treated all save one recovered. Whether the pneumotoxin and antipneumotoxin theory of its mode of action is final or not, remains to be seen. In the sole American case defibrinated blood was used, with results which do not encourage a second trial.

#### SALOL AS AN INTESTINAL ANTISEPTIC.

In the *Practitioner*, SYMPSON publishes a useful paper on salol as an intestinal antiseptic. He recalls the well-known fact that, after having been swallowed and passed through the stomach

unchanged, it is split up in the duodenum by the pancreatic juice into its constituents, salicylic acid and carbolic acid. Their action will be alluded to more in detail later on, but it may here be said that they are thrown out of the body partly by the kidneys (the urine not infrequently being blackened by the carbolic acid) and partly by the intestinal tract in the fæces. From experiments on dogs whose pancreases have been extirpated, there seems to be reason to think that salol can be absorbed from the intestine without the intervention of the pancreatic juice. As to its action on digestion, there are different opinions, some authorities saying that it unsettles the digestive processes and that it actually sets up gastric trouble. These statements refer to its action in typhoid fever, which will be mentioned presently; other observers have, however, noted directly the contrary results. Sympson has personally taken salol in 5-grain doses three or four times a day, both before and after meals, when he has been perfectly well, without experiencing the slightest interference with digestion or appetite. The following experiments will show, however, that salol does appreciably affect the different digestive ferments so far as regards their rate of action:

*Experiment 1.*—Ten grains of arrow-root were boiled in two ounces of distilled water, cooled down to 100° F., and ten minims of Bleasdale's pancreatic essence added. The solution became perfectly clear. When one grain of salol was added before boiling, the starch required twice the amount of pancreatic essence and an hour's more time (being kept at the same temperature) before the conversion was complete. If the salol was merely added with the essence, it made no difference. The same results followed, only less marked, from the use of half a grain of salol.

*Experiment 2.*—Five grains of boiled and finely-chopped-up white of egg were pounded up with the following mixture: Benger's liquor pepticus twenty minims, dilute hydrochloric acid ten minims, and two ounces of distilled water. For four hours this mixture was kept at a temperature of 100° F. The albumin had entirely disappeared and the mixture gave evidence of containing peptones. The addition of half a grain of salol checked the process considerably; at the end of the same time there were several fragments of egg undissolved, and two or more hours were required for complete dissolution. Both these sets of experiments were frequently repeated, and the results were distinct and constant.

Before finishing this brief account of salol, it

may be said that it has been accused of producing herpes and of increasing the delirium which frequently occurs in the course of typhoid fever. Sympson has not noticed this latter himself in either complaint or when he used salol in cystitis.

In normal digestion the semi-digested acid chyme is poured out from the pylorus into the small intestine, to be exposed to the influence of the bile and pancreatic juice. These complete the digestion of the various food-stuffs, and some of the products of this digestion are due to the micro-organisms which are present in the intestine. Their work seems to be modified or kept in check by the presence of bile, for, as Foster remarks, "Bile possesses some antiseptic qualities. Out of the body its presence hinders various putrefactive processes; and when it is prevented from flowing into the alimentary canal, the contents of the intestine undergo changes different from those which take place under normal conditions, and leading to the appearance of various products, especially of ill-smelling gases."

The stomach undoubtedly is responsible for some cases of dyspepsia where the chyme is passed on to the intestines in an imperfectly-prepared manner, which produces duodenal disorder. But in the following class of cases there is evidence that occasionally the secretions poured into the intestine are at fault. The patient is probably of a "bilious" temperament; he may have a clean tongue, with great loss of appetite, and consequent loss of flesh; no pain during a meal, but coming on about two and a half to three hours after. Very likely he is constipated, and when his bowels are relaxed the motion is grayish white. As a rule, he will not suffer from nausea, only a little retching sometimes, and instead of the gas being acid, as it so often is, it may be quite alkaline and "soapy," as a patient once told me. The seat of pain is the lower part of the abdomen, and is relieved by passing wind. There will, perhaps, be a slight yellowness, hardly amounting to actual jaundice. These cases belong to the same class as those described by Dr. Allchin in his lectures on duodenal indigestion. Sympson believes that the symptoms are due to excessive and faulty fermentation in the small intestine, owing to alteration in character and amount of the ordinary digestive fluids, and more particularly of the bile. Dilute nitro-hydrochloric acid to these patients, sometimes combined with liquor pepticus, to help the stomach do its work, has made little or no difference in their condition, and opium in any form by the mouth has not

given that speedy relief which it does in gastric affections. So, latterly, the writer has been in the habit of beginning with 4 or 5 grains of calomel, and following it in an hour or two's time with 10-grain doses of salol every four hours. This, to use the language of a somewhat enthusiastic patient, "acts like a charm" when taken about one and a half hours after meals. The pain ceases, the swelling of the abdomen does not appear, the appetite improves, and, more important still, the wasting—probably due to the non-digestion of a large part of the food—departs.

Salol has also been found exceedingly useful in a form of infective diarrhoea. Some months back the writer saw a family in a village near Lincoln who all had diarrhoea, passing dark-brown watery stools five, six, seven, or eight times in the twenty-four hours, attended with severe abdominal pain. In a few days several of the inhabitants of the village were seized with the same complaint, and every one had been into the first-mentioned house. Several more got it from the second source of infection. The probable origin of the disease was not ascertained. Opium alone in some of the cases was tried, but its action was far inferior to that of salol, whether combined with opiates or not.

In cases of ordinary diarrhoea, too, there are few remedies which more speedily check the flow and the pain than 10-grain doses of salol. Some years ago, in the *Lancet*, Sympson advocated giving glycerin of borax in the diarrhoea of infants, believing that undue fermentation in the intestines was the *fons et origo mali*. It does answer well, but salol is to be preferred in the severer cases, in doses proportionate to the age, as it is a little more certain, more antiseptic, and almost as agreeable to take.

Lastly, he has been using salol exclusively in typhoid fever, not so much on the idea of combating the specific poison, but of cleaning and keeping clean the intestinal tract, and so subduing the irritation of the glands of Peyer's patches and other ulcers there, and that caused by the secretion from these ulcers in the intestine. Salol also prevents the excessive formation of wind, which is sometimes so vexatious a trouble to the patient. Salol brings the temperature down generally one or two degrees, causes abundant perspiration (this can be readily combated by giving oxide of zinc, tincture of belladonna, and some quinine in a mixture), reduces the number of stools from twelve to fourteen in the twenty-four hours to three or four, and, when they are offensive, deprives them of any odor whatever. No bad effects

were noticed with regard to its action in producing delirium. Its use was continued in typhoid fever for about a week after the disappearance of diarrhoea. It was always given in ro-grain doses, suspended by means of compound tragacanth powder, at first (in typhoid fever and other complaints) every four hours, then every six, and for the last week three times a day. It was always given after food.

#### PROPHYLAXIS AND TREATMENT OF DIPHTHERIA.

ROBINSON contributes to the *New York Medical Journal* a long paper on this subject, of which the following relates to the treatment of the disease. He thinks that, despite the advances made during the past few years in our knowledge of the pathogeny of diphtheria, as is shown especially in bacteriological investigations of this disease, the treatment of it is still uncertain and unsatisfactory. The really bad, malignant cases frequently progress inevitably to a fatal termination, and in some of them it is doubtful if any treatment thus far tried will arrest their march for a while or ultimately cure them. Such appears to be the testimony of some excellent observers of wide experience. These fatal cases doubtless become so by reason of the toxic character of the epidemic and the extreme susceptibility of some patients to the virulent poison of the disease. It is generally admitted, however, that those patients continue to react most favorably who are actively and judiciously treated from the inception of the disease. The mode of treatment seems to vary considerably with different observers. There is, however, a tolerably large and increasing number of eminent practitioners who evidently consider proper local treatment of the highest importance. Of these, many use drugs internally, with the conviction of being helpful to the patients.

Among them may be cited Jacobi, who thus speaks of the use of bichloride of mercury when it is given internally: "That its beneficial effect is not at all limited to the cases of laryngeal stenosis, but also those of sepsis. Indeed, in a great many such cases it has been administered and found effective." On the other hand, Osler writes, that "we are still without a remedy capable of combating in any way the effects of the poisonous toxalbumins." Robinson did not see from bichloride of mercury "the specially good effect which many writers describe." The latest report, moreover, of one of the large German hospitals is to the effect that no internal treatment was employed, and the results

obtained with severe cases of diphtheria have been quite favorable as compared with numerous antecedent or contemporaneous results accomplished elsewhere. The report just referred to is that of the Friedrichshain Hospital in Berlin, where it is stated that "during the last two years no drug treatment was instituted," and yet there were sixty-four per cent. of cures. This experience is also corroborated by that at the Willard Parker Hospital, where, according to Dr. William H. Park, "the only constitutional treatment is to give alcoholic stimulants throughout the course of the disease to those showing any tendency to heart-failure." The great difficulty in obtaining the best effects of local treatment is due to our inability to reach directly all the parts involved with topical applications. Ordinarily it is believed that these applications should be distinctively antiseptic in nature. In regard to the particular drug employed, the strength, manner, and frequency of its use, there are great differences of opinion. Of course, the manner in which treatment is conducted must differ somewhat with adults and children, the latter being less amenable to reason and less willing, therefore, to submit quietly to the necessary manipulations for the cure of the disease. Most observers are united in the belief that our main efforts should be directed towards destroying or lessening the vitality of the bacilli, diminishing the local spread of the disease, neutralizing the toxic results of absorption of the poisons produced by the bacilli, and support of the patient's strength with food and alcoholic stimulants. Inasmuch as the majority of cases of diphtheria occur among children, we must first consider how such cases may best be treated. This will depend upon whether the disease affects the nose, the pharynx, the larynx, or all these organs. If it attacks the pharynx, and as soon as we have the first local evidence of this implantation, mild cleansing, disinfectant solutions should frequently be employed. Depending upon the age of the child and its degree of weakness or strength, the throat must be treated with sprays, with irrigation, or with gargles. Sometimes one, sometimes the other method is most successful, according to the age and willingness of the little patient. In this connection the fact should be emphasized that it is more useful and satisfactory to disinfect and cleanse the throat by means of sprays, employed not directly through the mouth, but indirectly through the nose. In this manner nearly every portion of the diseased membrane is brought into more complete contact with the medicated solution than in any other way, and with less distress

and fatigue to the sick child. Whenever the spray fills the nasal passages, it will almost inevitably, in the large number of instances, reach almost the entire naso-pharynx, the middle pharynx, and portions at least of the fauces and tonsils. Through efforts of gagging or choking by the patient, the latter parts are surely cleansed and disinfected. Nasal sprays should be rather coarse, never very strong, and should be repeated every hour or two. The frequency of their use should depend somewhat upon the malignancy of the case, the thoroughness with which they are employed, and the time of day or night. In this relation the author and Dr. C. A. Siegfried are in accord. The latter writes, "In the very young, sprays can be introduced through the nostrils to the back of the throat;" and the treatment of the Willard Parker Hospital is the same, where "all patients have their nostrils syringed with a bichloride solution." Dr. A. Jacobi also states, with his very large experience to guide him, as follows: "Gentle nasal injections reach the important part of the pharynx better than injections in the oral cavity." "Nasal injections must be made early, frequently, and persistently." In speaking of nasal and naso-pharyngeal diphtheria infection, Dr. Jacobi affirms emphatically that "nasal injections alone are beneficial, and sometimes so to a remarkable degree." Immediately after the use of the spray, a strong disinfecting solution should be applied directly to the diphtheritic patches in the throat by means of a swab or brush. The sprays for the nose must be preferably made from mild solutions of carbolic acid with lime-water, borax, or bicarbonate of sodium, or else from very dilute solutions of bichloride of mercury. The solutions of carbolic acid should not be stronger than one or two per cent.; those of mercury, 1 to 4000, 8000, or 10,000.

In this connection should be mentioned that the *résumé* of the collective investigation of the THERAPEUTIC GAZETTE (1883) is not favorable to the use of carbolic acid. It is regarded as a useless and positively harmful application. Jacobi seems to support this view, despite the fact cited by him that Prudden found that a one-sixth-per-cent. solution suffices to stop the emigration or leucocytes.

From time to time, or about once every four hours, it is wise to give the fauces, tonsils, and pharynx a thorough, direct cleansing with this same spray or by means of a syringe. The local applications with a brush or swab to the back of the throat should be made with a solution of bichloride of mercury (1 to 500, or even 1 to

250). During these necessary manipulations the child should remain in bed or be held on the lap of the nurse, and wrapped in a blanket. Dr. Billington thus describes how nasal syringing can best be accomplished: "The assistance of two persons is required. The child is seated across the lap of one of these persons, who secures his hands with one of her own, and with the other holds the basin to receive the discharge. The other person stands behind the child, takes his head between the palms of her hands, and, leaning forward, holds it firmly against her breast. A third person, who should, when possible, be a physician, can then easily make the injection into the child's nostrils without the danger of injury to them by its sudden movements." To show how opposed is the experience of competent observers may be cited Jacobi's judgment, which is that "it is acknowledged as a positive rule among all good practitioners that no child must be taken out of bed for the purpose of injections, that the preparations for the procedure must be made out of sight, and the injections given quickly but gently, in a recumbent or semi-recumbent posture." Subsequent to the cleansing and swabbing, the child should be allowed to rest during a half-hour or an hour. Then a dose of the tincture of the sesquichloride of iron in glycerin and water, or a tablet of bichloride of mercury in solution in water or milk, should be given, followed by liquid food and alcoholic stimulant. The amount of the tincture of iron given should be from 1 to 2 drops for every year of the child's age; that of mercury, in tablet form, from  $\frac{1}{100}$  to  $\frac{1}{50}$  grain. The best old brandy, in amount proportionate to the age and condition of asthenia, should be given in milk, alternated occasionally with beef-juice or concentrated broths of mutton or chicken. Meanwhile, of course, the antiseptic vapors (referred to under prophylaxis) of turpentine, carbolic acid, and oil of eucalyptus should be kept in use more or less constantly. They must also be directed in such a way from a croup-kettle under a hood over the child's head, or a tent around the crib, with suitable supports and an opening for ventilation, as to allow the child to inhale the vapors sufficiently to obtain an appreciable medicinal effect in this manner.

Robinson's method is based upon a judicial estimate of the conditions involved, and with due regard for the knowledge thus far acquired through experimental research and clinical experience. There are many other agents, as we all know, in the nature of caustics, astringents, disinfectants, dyes, solvents, etc., which have been praised by different observers for their

curative action in diphtheria. Among them all, none seems to merit confidence as much as those already mentioned, especially when they are employed after the manner indicated. Many practitioners laud their use more than they do other agents of a similar or different order. Personally, the author believes that freshly-powdered cubeb has a very marked action in changing favorably the character of the membranous deposit and in lessening the accompanying catarrhal inflammation of the fauces, which always is allied with the evident diphtheritic manifestations.

To make applications more frequently to the nasal passages or to the throat than the writer advises is unnecessary and often injurious. They frighten and exhaust the child too much. They do not allow it to take and retain sufficient nutriment. If the solutions are made stronger, they are too irritating to be frequently repeated, and perhaps render the mucous membrane of the parts affected more prone to become involved by the encroachment of the disease than they otherwise would be. The failure to cleanse the nose and naso-pharynx efficiently is one reason why an otherwise good method of treatment is not oftener followed by the amelioration or recovery of the patient. The cleansing of the nasal passage is carried out whenever the presence of diphtheritic membrane in this organ is assured. In cases, however, in which this membrane is not apparent it is too often neglected. Absorption of many poisonous products is thus frequently permitted when it might be in part prevented. Many cases, no doubt, become much more serious through the omission referred to. Is it not true that absorption from the nasal passages takes place more readily than from the fauces? Do not the most serious cases usually show extension, sooner or later, of the diphtheritic process to these passages? Why not, therefore, avoid or prevent this grave development, if possible, by rational means? In regard to the frequency of local applications, it is again urged very strongly not to employ them more frequently than above advised. Meddlesome or too much interference is ultimately injurious in diphtheria, and mainly because it exhausts vitality and prevents essential recuperation by means of rest, food, and stimulants. Applications of undue strength frequently made to the nasal passages occasion pain and irritation, which increase notably the distress of the patient, with no compensating return, and make the membrane, by possible abrasions, more susceptible to the virulence of the disease. Whenever the symptoms point, unfortunately, towards

the involvement of the larynx, we should rely far less upon the utility of disinfecting sprays than in nasal or pharyngeal diphtheria, inasmuch as they penetrate very little, if at all, within this organ. Antiseptic vapors, the internal use of the medicines which have a favorable constitutional effect, are here more to be trusted. In the event of considerable laryngeal obstruction, we must make use of vomiting agents,—such as turpeth mineral, alum, ipecac,—if the child's strength permits, and follow their use with active stimulation. Occasionally false membranes from the larynx are thrown off by this means, and great temporary relief is obtained. At times no remedial effect is produced, and the child is only weakened and distressed to no purpose, for the laryngeal obstruction after their use is quite as great as previously. Under these circumstances we must look to intubation or tracheotomy as our sole remaining means of help.

In support of his views, Dr. Robinson quotes the following: "At a meeting of the Michigan Medical Society the secretary demonstrated, in a tabulated statement, accompanied with a graphic chart, important facts in the various outbreaks reported by local health officers during the year 1886. In 102 outbreaks, in which there was neglect of one or both of these measures, the average number of cases to the outbreak was a little over 16 and the average number of deaths 3.23, while in 116 outbreaks in which both were enforced the average number of cases was 2.86 and that of deaths .66. In other words, these simple precautions reduced the number of cases occurring during the year by 1545 and the number of deaths by 298."

Finally, Dr. Robinson closes his article with the following from the last published paper of Dr. William H. Park. Dr. Park writes, "The making of a true diagnosis in every case is not of scientific interest only, but of great practical importance. Care for the public health requires that every case of possible diphtheria be properly isolated and treated as diphtheria until all doubt is removed. Regard for the patient demands that no suspicious case that is not diphtheria be regarded and treated as such any longer than the fourteen hours absolutely necessary for making the diagnosis. In doubtful cases, therefore, it is the duty of physicians to obtain a diagnosis by the use of cultures. A correct diagnosis will also be a satisfaction to them, and will be a help in prognosis and treatment, and of great value in the diagnosing of future cases. The efficiency, simplicity, and cheapness of the methods for making an early

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diagnosis in doubtful cases would seem to render its employment by health authorities among the poorer classes advisable."

#### INTRATYMPANIC OPERATIONS.

In a valuable paper in Buck's *Reference Hand-Book of the Medical Sciences*, September, 1893, DR. E. B. DENCH details the various measures which have had trial, generally brief and unsatisfactory, for the relief of middle-ear lesions. The present status of excision of the drum-head and ossicular chain, wholly or in part, is well presented, with the weight of this earnest worker in its behalf. His operations now number forty: eleven in non-suppurative cases, with great improvement in hearing in six and moderate gain in four. In the twenty-nine suppurative patients, hearing was often good, but was improved in eighteen and perhaps lowered in one. The discharge stopped completely in fifteen cases and lessened in nine, while five were still under treatment. The duration of observation is not stated; and while the writer regards his results as less good than he could wish, there is a chance that later study would further reduce his satisfaction, the additions from the category of "unhealed" being probably more than offset by relapses among those rated as cured. His quotation of other men's results is at times misleading, for nineteen of the forty-two cured cases of the seventy-five in Ludwig's report had a simultaneous trephining of the mastoid, without which they would doubtless have fallen among the failures, as did others later cured by this operation. The fact that Dr. Dench has been doing but a dozen or so excisions each year indicates that he selects his cases with more care than many of his colleagues. He gives a truer representation of the matter than some more extended series, where the operation was often a first rather than the last resort.

#### CATARACT EXTRACTION WITH THE IRIS RETRACTOR.

DR. FRANCIS VALK (*New York Medical Journal*, October 28, 1893) describes his method of operation as follows:

At the time when he is ready for the operation he instils a sufficient quantity of a solution of cocaine (four per cent.) to render the cornea anæsthetic, but not to dilate the pupil. The patient is then placed on a steady table or bed, with a good clear light on the eye, and the lids are opened with a speculum. The eye is then washed with a solution of boric acid, while his instruments are all placed in boiling water and

then on a clean towel and covered until wanted.

*Section.*—This he considers the most important part of the operation, as upon a good section, he believes, depends the ultimate success. This should be in the same plane, except at the finish. He wishes to avoid the conjunctival flap, and by the perfect coaptation of the wound in the cornea we may avoid slow healing, septic infection, and prolapse or incarceration of the iris. He makes the section either upward or downward, according to the eye to be operated upon, as upward in the right eye, downward in the left, or, if the operator is ambidextrous, then both sections may be made upward, as he considers the upward section preferable. He prefers, in making his section, to cut always towards himself, for in so doing a much smoother and clearer cut is produced. He always makes the puncture and counterpuncture wholly within the corneal tissue, through its transparent margin about one millimetre from its periphery, and so that the cutting edge of the knife will just cover the pupillary edge of the iris on the side towards which he proposes to make the section. If possible, he rapidly makes the section of the cornea with three distinct cuts: first, carrying the point of the knife, as soon as the counterpuncture is made, upward and forward, cutting one side of the cornea; then the heel of the blade is drawn upward and backward, so cutting the opposite side; then, turning the knife on its long axis, the section is completed with the third cut by pushing the knife steadily forward until released. He thinks De Wecker, of Paris, first suggested this method, and he prefers it to all others. As he completes the section in the above manner, the knife comes out some distance from the scleral junction, leaving room for the iris to be tucked in when drawn back by the retractor.

At this time prolapse of the iris may occur; if so, it must be returned with the spatula if we wish to save the iris; but if not, then it may be drawn out and cut off if we decide an iridectomy is best. Another complication that may occur at this stage, particularly in very old people, is the rupture of the capsule, or the zone of Zinn, with the presentation of the lens at the section; if so, it must be removed at once by pressure on the cornea. He is inclined to think that, should there be any tendency to prolapse at this stage, it is better to perform an iridectomy at once to prevent any future prolapse as the healing process proceeds. If no complications arise, he then proceeds to open the capsule by a peripheral incision, passing the



cystotome inward to the pupillary space, then under the iris, and sweep it around beneath the edge, so as to cut the capsule in more than one-third of its periphery on the same side that the section has been made.

The eye being now ready for the extraction of the lens, it is grasped by the fixation forceps, directly opposite the section, and held steady by a careful assistant. He now takes the retractor in the left hand, and, with the blades closed and the set-screw so arranged that the blades will open to about the diameter of the pupil, he insinuates the ends through the section to the pupillary space. The blades are now opened by pressure and the iris drawn back and tucked beneath the edge of the lower corneal section. Holding it steady in that position, a slight pressure is made on the opposite side of the cornea by a spoon or hook, causing the lens to rise up and easily pass out over the ends of the blades. As it does so, and as soon as the lens presents itself at the section, the retractor is pushed slightly inward, at once releasing the iris. The retractor is then generally removed, with the lens lying in the concavity of the blades. As the lens clears away, we find the iris back in its position, not injured in any way, nor has it been exposed to the air, as may occur in simple extraction.

In case there should be any cortex remaining, which he does not think will be absorbed or will interfere with the vision, he reintroduces the retractor, and, drawing back the iris again, these masses are easily pressed out with the spoon. This completes the operation, and, the section being in perfect apposition, the speculum is removed, the eye gently closed, and the bandage applied.

#### MASTOID TREPHINING AND THE SURGICAL ANATOMY OF THE TEMPORAL.

In a paper read before the Philadelphia County Medical Society, May 10, 1893, DR. B. A. RANDALL remarks upon fifty cases operated upon in his previous four years of practice, with the important claim that they were from among upward of two hundred cases in which the symptoms of mastoid disease had been threatening. Nearly three-fourths of the patients had been brought to resolution without operation, hot syringing and rapidly-changed fomentations, with *rest in bed*, being his principal reliance for the relief of pain and inflammation. But two cases of the fifty had been lost, only one with room for blaming the operation; and the cure in the remainder had generally been prompt and lasting. The utmost thoroughness

in removing all necrosing tissue, in the directions where this was safe, was claimed to be the true conservatism, but that the violence to the organ of hearing should be the minimum possible. Safety should never be sacrificed to brilliancy, and in the more precarious regions too little should be done rather than too much.

In the supplement of the *Reference Handbook* above referred to, the same writer gives a brief and summary view of mastoid anatomy, confirming decidedly the claim of those who insist that every operation should be done as though the bone was known to be of the most dangerous type. The lateral sinus, which generally approaches within some six millimetres of the surface at a point corresponding with the insertion of the auricle, and some twelve millimetres back of the meatus, may be much more anterior or superficial, leaving absolutely no room for trephining the bone, and this in any type of long or broad head and on either side, contrary to the claim of Koerner that it is generally much safer on the left and in the long, dolicocephalic skull. The middle cerebral fossa is also quite as variable, and may have its floor as low as the upper margin of the auditory meatus. It was never lower in the five hundred skulls measured; maximum or minimum height was found in every type of cranial form. Mastoid trephining should, therefore, be done only with an instrument permitting every stage of the penetration to be closely observed, as in chiselling; and the point of entrance should be as close as possible behind the spine, which can almost always be found marking the posterior margin of the auditory meatus. The surface should be closely inspected, after thorough baring, for any sign of a superficial sinus. The channel should lie close behind the canal, and not rise above its roof except as the antrum is approached. The inner wall of the antrum with the facial canal is probably never less than fifteen millimetres from the surface, so penetration to this depth in the prescribed direction can hardly reach the labyrinth or facial nerve. In children the antrum is more superficial the younger the child, and the sinus and cerebrum are absolutely as well as relatively less exposed to injury in a properly-executed operation.

#### INDIRECT MESSAGE OF THE LENS FOR THE ARTIFICIAL RIPENING OF CATARACT.

DR. EDWARD JACKSON (*New York Medical Journal*, October 28, 1893) describes his experience with Dr. Joseph A. White's method of

ripening immature cataract, a method suggested by Dr. T. R. Pooley, of New York. Seven cases are reported. The following is the method of operating:

After the full dilatation of the pupil and the free instillation of cocaine, the anterior chamber is tapped with a paracentesis needle or broad needle, the incision being kept open by the point of the needle until the aqueous has been completely withdrawn with some little pressure of the fingers through the lids upon the globe. He uses the fingers for fixation without a speculum. Then a tortoise-shell spatula is pressed upon the cornea within the area of the pupil and rubbed around in a circle and then in radiating lines, stroking from the centre towards the periphery of the cornea. During this latter manipulation the margin of the pupil will be seen to retreat before the spatula, so that a large part of the anterior surface of the lens can be acted on without pressure upon the iris. The manipulation is continued a minute and a half to two minutes and a half.

The *after-treatment* consists of closing the eye for a few hours and the subsequent instillation of a mydriatic until the eye is free from hyperæmia. The preliminary instillation of cocaine is repeated three or four times, using it more freely than he would for cataract extraction, with the idea of rendering the cornea more flexible.

To summarize his conclusions with reference to this method of ripening cataract:

It seems more certainly efficient than Förster's.

It is almost entirely free from danger.

It is probably a better means of avoiding prolonged practical blindness than the extraction of the immature cataract.

#### A DEPARTURE IN THE OPERATION OF CANTHOPLASTY.

DR. KENNETH SCOTT (*Ophthalmic Review*, 1890) writes as follows:

The usual classical operation of canthoplasty cannot always be relied on as an unfailing remedy in cases of blepharophimosis or blepharospasm. More particularly is it true in those cases where the condition is an extreme one, or where there is, or has been, a considerable amount of inflammatory action in the eyelids, accompanied by thickening and very often by hypertrophic degeneration of the palpebral conjunctiva. These are the cases in which the operation of canthoplasty is most often called for, and when the one which is usually de-

scribed has been performed there is often a slight reactionary cedema, the lips of the wound approximate, and in spite of every preventive effort a reunion of the opposing surfaces occurs. Sometimes, on the other hand, the middle suture, which is placed in the outer angle of the palpebral fissure, tears its way through the conjunctiva, and the eye returns again to the condition it was in before operation.

The following is the manner of procedure which he now invariably employs: The outer canthus is divided with scissors in the usual way; a spring eye-speculum is then introduced between the eyelids, and the portion of conjunctiva which is opposite the centre of the wound is freed by scissors from its attachment over the globe, almost as far as the corneal margin. The free edge of the conjunctival flap, still held in the fixation forceps, is attached by a fine silk suture, as in the usually described operation, to the apex of the skin wound, when it will be found that there is not the slightest tendency towards dragging. The speculum is removed, and the conjunctival edge is then sewed in turn to the opposing cut margins of the upper and lower eyelids. A silver-wire suture, which has been thoroughly softened in the flame of a spirit-lamp, is then passed right through the substance of the upper eyelid, from the skin to its conjunctival surface, near to its ciliary margin, and a short distance from the cut surface of the canthus. It is fastened by twisting lightly, so as to avoid constricting the tissues. The needle end of the suture is then passed through the substance of the eyebrow, directly over the outer third of the eyelid, and is fastened by twisting it there to the other free end brought up to meet it. The lower palpebral part of this strand of silver wire is then curved outward, with dissecting forceps, so as to evert the outer end of the new lid margin and prevent all possibility of its approximating to the opposing cut edge of the lower eyelid.

He has never known any suppuration or other irritation occur if the parts have been thoroughly cleansed previously with some efficient antiseptic lotion, and after operation an antiseptic dusting-powder, such as iodoform and boric acid in equal parts, applied.

The silver-wire suture should not be removed until it is seen that the wound between skin and conjunctiva is quite healed; this usually takes place about the fourth day. The operation can be performed with cocaine quite easily, except in the case of children, when a general anæsthetic is usually required.

THE THERAPEUTIC CONTRIBUTIONS OF  
OPHTHALMOLOGY TO GENERAL  
MEDICINE.

ARGYLL ROBERTSON, in an address delivered before the Ophthalmological Society of the United Kingdom at its first meeting in the session of 1893-94 (*British Medical Journal*, October 28, 1893), discusses the subject contained in the title. It is interesting to note, among other things, that he points out the advance which ophthalmology has made in the treatment of headaches, or in functional nervous disturbances so grave that they lead to the suspicion of serious cerebral lesion, which are yet remediable by suitable glasses and the performance of an operation on the muscles to overcome some latent tendency to misdirection of the eyes. The value of shortening the tendon is referred to, as well as advancement, the opinion being expressed that, although the general surgeon has long been accustomed to deal with muscular deformities by cutting through tendons, he is only now learning to deal with elongated and weakened muscles after the methods of ophthalmic surgeons.

The undoubted value of mercury in the treatment of syphilis is insisted upon, and the astonishing results by the use of this drug on syphilitic eye-affections, which may be watched with accuracy, is pointed out as proof of this assertion.

Local depletion, for example, in acute iritis, cyclitis, and even glaucoma, is commended, and general medical practitioners are urged to investigate its undoubted value in ophthalmology before giving it up in practice. In like manner, counter-irritation and blisters are commended, and the lesions presented to an ophthalmic surgeon are quoted as a therapeutic testing-ground for such medication. The following method of counter-irritation is the one employed in Edinburgh, and is most efficient, according to Robertson. It consists in moistening the upper lid and then rubbing a stick of lunar caustic three or four times across the moistened surface. Within a few minutes a burning pain is experienced in the lid, the skin becomes reddened and the lid oedematous, while the epidermis, at the point on which the caustic was applied, presents an ashy-gray tint. The severe pain lasts from half an hour to an hour, but the surface of the lid remains tender to the touch for two or three days. A black crust forms on the surface, but is cast off in six or eight days and leaves no permanent mark behind. The experiences of ophthalmic surgeons with nitrate of silver confirm a fact—now many times proved—that it ranks high among the various antiseptics.

THE EFFECT OF CORRECTING ERRORS  
OF REFRACTION IN EPILEPTICS.

The following abstract of a paper presented by DR. JOHN HERN to the Sixty-first Annual Meeting of the British Medical Association appears in the *British Medical Journal*, September 30, 1893:

Although it would be obviously incorrect to state that because an epileptic had an error of refraction it must be the cause of his epilepsy, yet it appeared probable that in some cases, at any rate, the eye-strain necessary in hypermetropes and others to focus a clear image on the retina might be the starting-point of the epileptic attack. At a meeting of the Ophthalmological Society early in 1893, Dr. Hern had shown the first case he had met with in which true epileptic seizures ceased on a correction of hypermetropia by glasses. In this case the patient had no "fit" if he used his glasses for reading, but if he neglected this an attack of true epilepsy occurred. Since then Dr. Hern had met with three other successful cases.

MR. HARTRIDGE thought that if the epilepsy were due to such a peripheral cause as might be produced by excessive or irregular action of the ciliary muscle, then the more completely this strain was relieved the greater the advantages which might be hoped to result.

MR. SYDNEY STEPHENSON urged the necessity of carefully distinguishing between the fits of idiopathic epilepsy and those resulting from hystero-epilepsy, because the fact would be generally admitted that the inception of any treatment novel to the patient would be likely to modify the fits associated with the latter condition. Again, assuming that peripheral eye-irritation would cause idiopathic epilepsy, it would be better to correct the ametropia as fully as possible instead of partially correcting it, as Dr. Hern had done in his cases. Finally, he suggested that further investigation was needed before a definite conclusion could be come to on the connection between errors of refraction and epilepsy.

BRIGADE SURGEON LIEUTENANT-COLONEL E. F. DRAKE-BROCKMAN mentioned two cases of lunatics who had cataracts, and in whom the cataracts were removed by operation. The effects on the mental conditions of these two patients were of the opposite nature. One, who before the operation was a mischievously mad girl, became quite docile after sight was restored. The other, who before the operation was a quiet and inoffensive lunatic, became very violent and had to be placed under restraint. Dr. Drake-Brockman thought that these cases might throw a side light upon the effect pro-

duced on the mental condition of patients by the restoration of sight or by its correction by suitable lenses.

DR. PERCIVAL had read the glowing accounts of some American ophthalmologists, who declared that they were able to cure many cases of epilepsy and insanity by correcting errors of refraction or by button-hole operations on the ocular muscles. A fair number of epileptic cases had been sent him, but he had no successes to report. No permanent diminution of fits seemed to have followed the most careful refractive correction. He would, therefore, think Dr. Hern's experience of three successful cases out of five most unusual.

MR. W. J. CANT said that he had seen one case in which the correction of hypermetropic astigmatism  $+2 + .75$  at 150 both eyes (full correction) apparently cured the epilepsy. The fits were not frequent—on an average once a week—and not severe. Many other cases of epilepsy had been examined and all the ametropic cases corrected, but only in one other case was there any relief to the fits.

#### IRRIGATION OF THE ANTERIOR CHAMBER AFTER CATARACT EXTRACTION.

HALTENHOF makes an abstract of Roethlisberger's thesis on this subject in the *Annales d'Oculistique*, September, 1893, as follows: After a complete study of the facts observed at Basel and in the papers published on this disputed subject, the author concludes in favor of irrigation as practised by Professor Schiess. The following are his conclusions: Irrigation of the anterior chamber aims only at the mechanical cleansing of the pupillary area and the reduction of the iris, but never has an antiseptic object. It is the quickest and gentlest process for extracting cortical remnants. The most suitable liquid is a lukewarm solution of concentrated boric acid, having the advantage over the physiological salt solution of remaining aseptic. Liquids which are not indifferent chemically—namely, solutions of chlorinated water, alcohol, sublimate, trichloride of iodine and distilled water—must be absolutely rejected, as they cause corneal troubles and iritic irritation.

#### ON THE ANTAGONISM OF ATROPINE AND MORPHINE.

DR. PRIESTLEY SMITH (*Ophthalmic Review*, July, 1893) abstracts an article by J. Samelsohn, reprinted from the *Centralbl. f. Klin. Medicin.*, 1893, No. 11, as follows:

The author points with surprise to the fact

that medical writers are still debating the question whether morphine acts as an antagonist to atropine. His own experience of the value of morphine in cases of atropine-poisoning has completely answered this question long ago.

During the course of twenty-six years Samelsohn met with nine cases of severe atropine-poisoning, and this represented a proportion of about 1 in 10,000 patients. It is somewhat surprising, in view of the very frequent use—and, as the author holds, the very frequent abuse—of atropine in ophthalmic practice, that serious toxic symptoms should occur so seldom.

Six of the nine cases were in children, and were mostly due to unskilful use of the remedy, the drops finding their way into the mouth instead of into the eyes. The amount of the poison entering the system could not be estimated in these cases. The toxic symptoms were those ordinarily produced,—viz., extreme excitement of the vascular system, great restlessness often passing on to delirium, and in some instances general convulsions. In every case a morphine injection promptly brought the alarming symptoms to an end. The remarkable toleration of atropine by the dog was well illustrated in one of these cases. The drop-bottle being overturned, its contents were licked up by a dog and produced in him no noticeable disturbance, whereas the small quantity of the same solution previously used for the child had produced severe toxic symptoms. Since adopting the practice of prescribing atropine for children only in the form of an ointment, Samelsohn has seen no further case of poisoning, even in the mildest degree. He adds, however, that the case in which a woman gave her child an ointment—happily not an atropine ointment—to eat has warned him that even this method is not absolutely free from risk.

The other three cases were in adults.

Atropine drops prescribed for a child were taken in mistake by the mother, in place of another solution which she had received for internal use. Being summoned to the patient, Samelsohn found the usual vascular disturbance and feeling of intense anxiety. A subcutaneous injection of morphine, .02 gramme (nearly  $\frac{1}{3}$  grain), quickly relieved the symptoms.

The next case was one of some diagnostic uncertainty. Being hurriedly asked, in the absence of the usual medical attendant, to see a patient suddenly taken ill, the author found a young man, twenty years of age, violently delirious, struggling with some friends who with difficulty held him in bed, gesticulating to drive

away the phantom figures around him; the face intensely red, the eyes brilliant, the pulse 140, the respiration 34, the pupils widely dilated. The state of the pupils suggested atropine-poisoning, but no member of the household was known to be using atropine in any form. It appeared that the patient had drunk, fifteen minutes before the onset of the attack, a home-made infusion for the relief of boils. A subcutaneous injection of morphine, of the same amount as the previous case, quieted the patient in a few minutes, so that he could himself give an account of the occurrence. It then transpired that the infusion drunk by the patient had been ordered by a dentist for washing out the mouth, and that the chief ingredient was belladonna leaves. Half an hour after the morphine injection the symptoms of poisoning began to reappear and soon again reached an alarming height. A second injection again removed the delirium and lowered the pulse- and respiration-rate. The improvement lasted three hours, when a third injection, followed by five hours' sleep, permanently removed all symptoms, with the exception of paralysis of the pupils and accommodation, which gradually disappeared during the following five days.

The final case is of especial interest, because the poison was given subcutaneously, like the antidote, and the dose was known in each case. A woman, aged fifty, under treatment in hospital, was ordered pilocarpine injections, and had received several such without any disturbance. Hurriedly summoned to her from an adjacent ward one evening, Samelsohn found her sitting up supported by the nurses, gasping for breath, the hand pressed to the heart, the face flushed and intensely anxious in expression, the pulse too rapid to be counted, the pupils widely dilated and fixed. The suspicion that the injection which an assistant had given a few minutes before was of atropine instead of pilocarpine was confirmed by a glance at the bottle still standing on the table. An immediate subcutaneous injection of morphine relieved the urgent symptoms in five minutes, removing the feeling of anxiety, reducing the pulse-rate, enabling the patient to lie down, and lessening the intense dryness of the throat; an ice-bag to the heart and the moderate administration of wine completed the relief. No further injection of morphine was needed, and three days later even the dilatation of the pupils had disappeared. The quantity of atropine injected was not less than .008 gramme (about  $\frac{1}{8}$  grain), that of morphine was .02 gramme (nearly  $\frac{1}{3}$  grain).

These observations show that morphine is a therapeutic antagonist to atropine; it appears to hold the toxic nerve disturbance in abeyance while the system eliminates the poison.

#### EXCISION OF A PIECE OF THE MUSCLE IN SQUINT OPERATIONS.

W. G. T. STOREY (*Ophthalmic Review*, July, 1893) abstracts an article by L. Müller, on excision of a piece of the muscle in squint operations, published in the *Monatsblätter für Augenheilkunde*, xxxi. p. 118, as follows:

The author believes that the operation to be described will be found an improvement on the ordinary operation of advancement. He prefaces his description of the operation with a very full account of the microscopic appearances in five pieces of antagonistic muscle removed by him (three from the rect. ext. and two from the rect. int.) compared with those of the normal muscle, specimens of which were procured from criminals. The chief points of difference were as follows in the antagonists: 1. The clear fibres (*hellen Fasern*) were to be found in relatively greater numbers. 2. In transverse sections the large number of nuclei in the muscle-cells and their central position in the cell was noticeable, and in longitudinal sections rows of nuclei were to be seen. 3. The finely-striated normal appearance of muscular tissue had largely disappeared, but fatty degeneration was not found, and the presence of connective-tissue degeneration was uncertain. Definite changes, therefore, were found, as was to be expected, in the antagonists, as these muscles are for a length of time overstretched.

Vieusse (*Recueil d'Ophthalmologie*, p. 330, 1875) first practised excision of a piece of the antagonistic muscle as a cure for squint, but he did this without combining with it tenotomy of the squinting muscle. Noyes also used the same procedure, both apparently in a few cases with good result, but the author's practice differs from theirs in the fact that he does not omit the tenotomy of the squinting muscle, but merely replaces the usual operation of advancement by one more consistent with surgical principles. He shows by quotations and by observations of his own that in the advancement operation the attachment of the muscle in its new position is difficult to secure, and may possibly, from its position being faulty, cause obliquity of the vertical axis of the eye. In his operation strict aseptis must be observed; the patient is put under an anæsthetic, to avoid the difficulties caused by spasm of the muscles. An incision is then made vertically about four m<sup>m</sup>

limetres from the limbus conjunctivæ, and the muscle freely exposed and caught on the strabismus-hook; its side attachments to Tenon's capsule are then divided with a pair of scissors by lateral incisions reaching rather farther back than the length of muscle to be excised; the length to be cut out is then measured with a pair of compasses, allowance being made to leave a piece one or two millimetres in length attached to the sclera; two strong silk threads are then passed through the muscle just behind the spot found by measurement, one above and one below, so as to include about one-quarter of the muscle each, and are made fast with surgical knots; one end of each suture is then cut off, so that there is left knotted into the muscle one thread above and one below; in front of these the muscle is now divided, and is divided again farther forward, so as to leave a stump one or two millimetres in length attached to the sclera; through this stump another pair of sutures is passed in a similar way, leaving two free ends; the two upper and the two lower threads are now firmly knotted together, and, if necessary, an ordinary Wölfler's tendon suture can be placed between them; the conjunctival wound is then closed with two sutures. The sutures in the muscle are never removed (in one of the author's cases they slowly, after two months, ulcerated out), and cause no inconvenience. Both eyes are bandaged for three days, and the sound eye is then half covered with a piece of plaster in such a manner that the patient can only see on that side on which the muscle has been sutured; on the fifth or sixth day the sound eye is altogether uncovered, and on the eighth day the eye operated on is also uncovered and the conjunctival sutures removed. The author gives a table of seven cases of strabismus divergens and seven of strabismus convergens thus operated on by him. His results seem to show that in strabismus divergens up to six millimetres a piece of muscle corresponding in size to the deviation, and in strabismus divergens greater than six millimetres a piece one or two millimetres greater than the deviation must be removed to effect a cure, and in strabismus convergens a piece about one millimetre shorter than the deviation. He gives a complete table of his results. Of the seven cases of strabismus convergens, four were completely corrected and three partially (to within one or two millimetres); the amount of squint before operation in the different cases was from five to ten millimetres. In the seven cases of strabismus divergens, three were completely and four partially (one to two millimetres) corrected; the amount

of squint before operation was from four millimetres to eight millimetres. The movements of the eye are not restricted after this operation as they are when the combined tenotomy is omitted, as by Vieusse and Noyes.

#### TENOTOMY.

PHELPS (*Boston Medical and Surgical Journal*, vol. cxxix. No. 28) after a discussion as to the comparative merits of tenotomy and replacement by force, and after a consideration of the value of manipulation and of braces in association with tenotomy, writes as follows concerning the operation:

Subcutaneous tenotomy should be performed upon all tissues which can be easily reached and divided with a knife without danger of cutting important blood-vessels or nerves. Nearly all of the tendons of the extremities can be subcutaneously cut with safety, and certainly one would never think of performing a large operation when a smaller one would do. When an open operation is performed, adhesions, sepsis, and wound infection are more likely to occur than in subcutaneous work.

There is, however, at the present time, but little danger from wound infection, and there is no objection to an open wound being made. It should be resorted to only where there is danger of cutting important blood-vessels, or for other reasons than to simply divide a tendon or nerves. The tendo Achillis should be divided subcutaneously.

Tendons passing through fibrous canals, as, for instance, those of the fingers, should not be operated upon in the fibrous sheaths, because adhesions usually follow.

The sterno-mastoid muscle should always be divided by an open incision along the clavicle. The iliacus internus and psoas muscles should always be divided at their attachment to the lesser trochanter by an open incision beginning at the greater trochanter and extending down the leg four inches. With a periostotome one can work over the femur, hugging it closely, and with safety detach the tendon from its attachment. The author did this once subcutaneously, and ligated the femoral about ten minutes after. The incision should be open to lengthen the biceps of the arm or split the tendon. Open incision should be performed when the hamstring tendons and surrounding tissues are shortened and require division.

The fasciculus given off from the tendon of the ring finger, when removed for the purpose of making the hand more useful for piano playing, requires an open wound. Open in-

cision, when performed on the sole of the foot for the relief of talipes varo-equinus, is not for the exclusive purpose of seeing just what is being cut, but to lengthen all the shortened tissues which hold the foot in the abnormal position.

Over-correction of any deformity should be practised. No tendons which are separated six inches can unite perfectly.

When open incision has been performed, after the required operation has been completed on the tendon, the wound should be closed and dressed antiseptically, and the parts should be kept at perfect rest for at least six weeks after the operation, after which, if deemed advisable, suitable braces can be applied.

By the introduction of strands of catgut, or tendons from the lower animals, reproduction of tendons may be made to occur.

#### *THE RADICAL TREATMENT OF CYSTOCELE OR PROLAPSE OF THE BLADDER AND UTERUS.*

CROWELL (*Medical Herald*, 1893) holds that cystocele usually follows parturition, and is due to faulty involution. There is, moreover, a condition of relaxation of the anterior wall of the vagina and of the floor of the pelvis permitting the descent of all relaxed superincumbent structures. The condition may be induced suddenly, but as a rule it is of slow development, so insidious in character that it becomes fully initiated before the patient is aware of it.

As a result of this prolapse, the bladder cannot expel its contents, hence there is residual urine, cystitis, pain, and tenesmus. For the relief of these conditions the slack in the anterior vaginal wall is gathered in, thus elevating the bladder to its normal position, and the uterus is anchored from above.

If a colporrhaphy is to be relied upon, it should consist in absolute separation and division of the vaginal septum from the bladder, removing such segments as are superfluous to the proper support of the prolapsed viscus. Such union should be stronger than those simply involving denudation, and better results might be anticipated; but, since the surfaces here involved are in an involuted, weak condition, any expectations of success from operations upon it alone must be doomed to disappointment in the majority of cases. To overcome the associated prolapse of the uterus the abdomen should be opened and the uterus sutured to the anterior abdominal walls at the lower angle of the wound. The technique now

employed consists in passing three silkworm-gut sutures through the fascia of the abdomen and the fundus of the uterus from side to side. Once the sutures are in place, the fundus is scarified and lowered and apposition made. The sutures are cut short.

Ventro-fixation, if practised before the expiration of the child-bearing period, might prove an embarrassment to a perfect rising of the uterus into the abdominal cavity during gestation. If such cases should present, as they have in the author's practice, the fixation may be effected by attaching the round ligaments by a suture passing through the fascia as previously described, then picking up the round ligaments of each side, approximating each to the other and both to the under surface of the abdominal wall. In this procedure the fundus of the uterus is in no way restricted. This latter operation serves every purpose for retro-displacements, or procidentia if not aggravated, but it is not sufficiently rigid in its anchorage to serve for the correction of any considerable degree of cystocele or vaginal prolapse.

#### *INGROWN TOE-NAIL AND ITS SURGICAL TREATMENT.*

HOWARD (*International Journal of Surgery*) claims that removal of the entire nail gives only temporary relief, and the trouble returns, usually tenfold worse; for when the nail grows out again it is thick and deformed, and often the distal end of the matrix destroyed and the nail more sharply incurved than before. Cotting, some years ago, suggested removing all the inflamed part by cutting away the whole side of the toe, treating the resulting wound antiseptically. The contraction of the cicatrix resulting from this wound draws the soft parts away from the nail. In performing the operation the first incision is made about three-sixteenths of an inch from the edge of the ingrowing nail, the point of the knife being carried directly towards the bone, but not deep enough to wound the periosteum. An elliptical wedge-shaped section of skin and subcutaneous tissue is removed. A piece three-eighths of an inch in width is often sufficient. The wound is closed with deep silk sutures. On the fourth day the sutures are removed and the wound dressed as in other cases. In from a week to ten days a shoe may be worn with perfect comfort. The operation is rendered nearly bloodless by wrapping a small rubber band about the toe; this is allowed to remain on until the wound is closed.

### *SURGICAL INTERVENTION IN A SEVERE CASE OF PELVIC NEURALGIA.*

RICHELOT (*American Journal of Obstetrics*) states that, in considering the utility of a radical operation for neuralgia, he refers to the most severe type of pain, situated in the uterus or appendages, corresponding to no discoverable lesion, and accompanied by a general neuro-pathic condition.

Laparotomy and vaginal hysterectomy are the two procedures to be considered. The former may be limited to a simple exploration, or include rupture of adhesions, partial resection of an ovary, unilateral castration, bilateral extirpation of ovaries and tubes. The latter may mean ablation of the uterus alone or of the appendages as well. Up to the present day laparotomy has been the only operation discussed. The author considers it far inferior to vaginal hysterectomy. He has himself performed the operation fifteen times in cases that had been partially cured by laparotomy, in five of which the neuralgia was the chief symptom. In all of them the result was good. Out of nine cases of hysterectomy not secondary to laparotomy, eight were successful. One of the patients no longer complains of pain, but has cardiac disease; two have been relieved of the pelvic pain, but complain of neuralgia elsewhere; five are perfectly well after a lapse of six, ten, and eleven months, and one after five years.

### *THE COLD DOUCHE AND TAXIS IN STRANGULATED HERNIA.*

RAIFORD (*American Medico-Surgical Bulletin*) claims that ninety per cent. of the cases of strangulated hernia can be reduced within a few minutes by the method of treatment which he describes. The operator should be seated to the left of his patient, and should perform taxis while an assistant pours, from a height, cold water over the tumor. With the index and middle fingers he first finds the constriction, the exact localization of which is materially aided by traction made upon the uppermost part of the tumor with the right hand. This should be done simultaneously with the palpation of the stricture and with the first application of the cold douche. The constriction found, the fingers are gently inserted beneath it, where they are held with a slight pull upward, while the tumor is lifted upward and pressed inward with the right hand, the cold douche being continuously applied. The author has in his cases placed the patient in the dorsal position, shoulders lowered, hip elevated, thighs

flexed at somewhat more than a right angle with the body.

Anæsthesia by inhalation or locally has never been found necessary, for reduction is accomplished in the time required to get the patient anæsthetized. In a few cases chloroform has been given, and a hypodermic injection of morphine or cocaine in two cases. ■

### *TRAUMATIC ATRESIA OF THE VAGINA, WITH HÆMATOKOLPOS AND HÆMATOMETRA.*

KELLY (*Journal of Surgery, Gynecology, and Obstetrics*) reports the case of a negress, about twenty-two years of age, who had been a constant sufferer since her first labor eight years previously, which was terminated by prolonged and severe instrumental interference. The child was still-born. Since that time she never menstruated, although suffering from monthly molimina, and with back-ache and discomfort in the lower abdomen. At one time she had an attack of pelvic peritonitis, during which she was confined to bed for several days. Upon attempting to make a vaginal examination, the finger passed into a large, smooth, capacious sac in which none of the ordinary landmarks were recognizable. Upon inspection to discover the source of error, it was found that the examining finger had entered the bladder without resistance through the urethra, which hung patulous under the pubic arch. Below this was a whitish spot composed of firm scar tissue about one centimetre in depth and one in breadth, representing the position of the vagina. Upon examining the pelvic organs bimanually by rectum and bladder, a series of large nodules were discovered in the posterior and upper part of the pelvis, which at first appeared to be myomata. A closer examination, however, showed these globules to be masses definitely arranged, one above the other, with shallow sulci between, and in the lower one fluctuation was distinctly felt. This was evidently due to distention of anatomical structures with preservation of their topographical relations. The upper portion of the vagina was distended with retained menstrual secretion; the cervical portion of the uterus had become converted into a sac, the internal os appearing as a constriction in the uterine body, while the upper portion of the uterus was likewise distended, thus forming the three masses, one above the other, in the following order: vagina, cervix, and uterine body.

No distention of the tubes could be distinguished. Repeated coitus through the



urethra had caused the enlargement of this channel. The patient was able to retain her urine about a half-hour.

With the index finger in the bladder and the thumb in the rectum, a large trocar was thrust between the thumb and finger, and evacuated five hundred cubic centimetres of thick, tarry blood. A dilator was introduced along the track made by the trocar, and the parts were widely torn asunder from one pubic ramus to the other. The canal thus made was four centimetres long. The edge of the vagina was now caught with forceps above the raw area and dissected free on all sides for about one centimetre, in the form of a collar, and, sliding down over the raw area, it was attached with six silkworm-gut sutures and a number of intermediate fine silk ones to the uninjured outlet. In this way the vaginal canal was restored without leaving any raw tissue. The result of the operation was a vagina of normal calibre and without apparent shortening.

#### THE SURGERY OF THE GALL-BLADDER.

BANKS (*Liverpool Medico-Chirurgical Journal*) has opened the gall-bladder on five occasions. The first two operations were performed upon elderly men, deeply jaundiced, and steadily becoming weaker and more emaciated. In each case a greatly-distended gall-bladder could be felt through the abdominal walls. This was stitched to the abdominal wall, and, when adhesion had taken place, opened. No stones were found in either case. The patients slowly sank from weakness, and after death it was found that there was cancerous disease present in both, involving the common bile duct. The third case was one exhibiting symptoms similar to those of the first two. He, too, had a greatly-distended gall-bladder. In this case the walls of the gall-bladder were so thin that, in attempting to introduce a needle through the peritoneal coat, bile oozed out through the needle hole. So it became necessary to slit up the bladder and allow the fluid to escape externally at once. Much of the jaundice disappeared, and the patient gained so rapidly in strength that he was soon able to get about again. A biliary fistula remained after the operation and refused to close. The man died some time later of cancer of the head of the pancreas.

The fourth case was that of a woman who had been jaundiced for some months.

At first there was only nausea, loss of appetite, and general malaise, but no pain. Some time later she had excessive pain in the region

of the gall-bladder, but no enlargement could be made out. The pain was so great at times that the woman had convulsions.

The gall-bladder in this case was found tucked up behind the liver at a great depth from the surface. It was small in size and contained only a little bile. It was strongly bound down by adhesions to the duodenum and neighboring small intestines. There was considerable difficulty in breaking loose these adhesions. Every touch produced fresh bleeding. On examination of the bladder a stone was found at its orifice. This stone was removed. It was impossible to suture the gall-bladder to the abdominal wound. To some parts of the gall-bladder wound it was possible to pull down the parietal peritoneum, the rest was closed with omentum. The patient made a good recovery.

The fifth case was a jaundiced female suffering from pain in the region of the gall-bladder. A distinct increase in the size of the organ could be made out by palpation. At the operation it was found to contain a stone, which was removed.

Robinson performed cholecystotomy on twenty-five cases not exhibiting jaundice, without a death, and considers the operation practically devoid of serious risk. He operated on nine cases where there was jaundice but no malignant disease, without a death.

With regard to cholecystectomy, he is distinctly opposed to it, except under certain rare circumstances; for instance, after cholecystotomy the cystic duct may be occluded, but the hepatic and common bile duct may remain free. Then a fistula remains, from which mucus but no bile exudes; in such a case he would remove the gall-bladder.

Cholelithotripsy he has practised on many occasions, chiefly for stones in the ducts; these he crushed with forceps protected with India-rubber, and pushed the fragments back into the gall-bladder. The calculi can be broken up with a needle previously. Sometimes, after crushing a stone in the ducts and pushing the fragments back into the bladder, he was content to leave the latter unopened.

He has collected seven cases of cholecystenterostomy, with one death. He recommends attaching the gall-bladder, not to the duodenum, which is fixed, but to the ileum, a few inches lower. A loop of the ileum is taken up and stripped of its contents; a ring of India-rubber is tied around the neck of the loop. This keeps it empty of both blood and chyme. Incisions are made into the bladder and bowel and the two structures are sutured together with

a Czerny-Lembert suture. The patient on whom he operated made a good recovery, and was well three years afterwards.

#### CATHETERIZATION OF THE URETERS.

KELLY (*Annals of Gynecology and Pediatrics*) describes an improved ureteral catheter, sound, and bougie, and refers to the methods of their use. Anæsthesia is unnecessary. The patient is placed in the lithotomy position, the bladder catheterized, and the urine set aside for comparison with that obtained from the ureters. The ureters are located by careful palpation through the anterior vaginal wall. The bladder is then distended with from five to seven ounces of aniline solution; this serves to do away with its rugosities, which would interfere with the catheterization. The catheter, closed at one end with a metal plug, is then introduced as far as the bladder, when its farther progress is assisted by sight and touch. The point is turned forward and the handle elevated, producing a slight prominence on the anterior vaginal wall, which forms a guide to the vesical orifice of the ureter. The end of the instrument is caused to glide in a fore-and-aft direction from the neck of the bladder to the cervix, in the median line, a little farther to one side, a little farther out, etc., until it reaches the ureteral eminence, which can be determined by the sense of touch. An attempt is then made to introduce the catheter into the ureter by carrying the handle to the opposite side, thus directing the point to the posterior wall of the pelvis; the instrument is then slightly withdrawn and turned a little more towards the side, and swept downward, outward, and backward in the direction of the ureteral prominence. The catheter is rotated with each of these motions until the point is directed fully outward and slightly upward.

When the catheter enters the ureter, touch will show that it holds a fixed position. It should be introduced into the ureter until its point reaches the wall of the pelvis, when the plug is removed from the end. A catheter may be introduced into the opposite ureter and both catheterized at one sitting. This is slightly more difficult. The urine from the catheter is caught in minim graduates. There should be a discharge of one-half cubic centimetre per minute from each catheter as a normal excretion.

The bladder being filled with aniline solution, the clear color of the fluid discharging from the catheters proves that it comes from the ureters. Fifteen minutes is an average

time for the duration of the catheterization. The urine of each side should be marked and set aside for examination. The catheters should be plugged and withdrawn, and the urine in each of them added to that in the graduates of the corresponding side.

#### DILATATION OF CERVIX FOR DYSMENORRŒA.

POND (*Annals of Gynecology and Pediatrics*) considers three classes of dysmenorrhœa according to the etiology.

1. Where the cervix is small and elastic.
2. Where the cervix is long, conical, non-elastic, and cartilaginous.
3. Where there are associated flexures.

In the first variety he recommends the use of a light Palmer dilator, one or more times, without anæsthesia. It should be carried to the full expansion of the blades, and applications made to the canal, or a strip of iodoform gauze introduced. This can be carried out at the office.

For the second condition he recommends the free division of the stricture on two or more sides, from the internal to the external os, with thorough dilatation, and the introduction of a stem to be worn ten to fourteen days or longer, if necessary. Following this the cervix should be dilated once or twice a month to avoid subsequent contraction. Very long cervixes require amputation.

In cases of flexion where, at times, it seems impossible to pass the light dilator, the Elliot repositr should be used, the organ carried into retroflexion, when the dilator can be easily passed beyond the angle of flexure. Should the cervix be dense, a heavier instrument may be used, and if this fail, incision and the stem are resorted to.

He reports seven cases illustrative of the application of the treatment in the different conditions, and suggests that dilatation be adapted to the relief of stenosis even in young girls.

#### CONTRACTION OF THE URETHRA IN WOMEN.

LOUBEAU (*Archives de Toxicologie et de Gynécologie*, 1893) refers to the rarity of this disease in the female. It is most frequently acquired, but may be congenital. When acquired, it is either of gonorrhœal or of traumatic origin. The gonorrhœal form is extremely rare. Cicatricial contractions may follow ulceration or traumatism. The symptoms are slow in appearing, owing to the dilatability of the canal.

The first symptom is a slight difficulty in micturition, which is followed by the sensation of a real obstacle, a lessened flow, pain in the back, groin, and pelvis. Cystitis may develop. Catheterization becomes painful or impossible. By vaginal touch the thickening of the urethra may sometimes be appreciated. The course of the affection is progressive. The diagnosis is established by the history and by an examination with a catheter. Inflammatory swelling of the urethral walls is to be excluded as well as spasm of the urethra.

A contraction of the canal may be produced by a polypus or tumor, but patient investigation will exclude them. Deviation of the urethra in cases of vesico-vaginal fistula may simulate obliteration. The treatment varies according to the case: cauterization, incision, electrolysis, dilatation, have all been resorted to. Loubeau reports a case of contraction due to cicatrization following cauterization for the removal of a polyp. The passage was almost entirely closed, but immersion in hot baths caused a flow of urine when all other methods had failed. Progressive dilatation was impossible, as no bougie or catheter could be introduced, hence internal urethrotomy was resorted to.

A narrow bistoury was introduced horizontally, following the normal direction of the urethra, and inserted to the depth of a little over an inch. The ensuing venous hemorrhage was copious, but easily controlled by compression. There was no post-operative incontinence of urine and not the slightest fever.

#### THE MANAGEMENT OF THE ABDOMINAL INCISION.

REED (*American Journal of Obstetrics*, September, 1893), in a paper read before the American Association of Obstetricians and Gynecologists, held in Detroit, June, 1893, referred to the occurrence of suppuration during convalescence, and the subsequent development of ventral hernia. These complications he refers to defective methods in the management of the abdominal incision.

These relate, first, to the preparation of the patient; second, to the formation of the incision; third, to the method of closure; fourth, to the remote or after-treatment of the wound. Defective methods of preparation depend chiefly upon failure to recognize and remove the debris and germ elements from the minute interstices of the integument.

Defective methods in making the incision relate chiefly to failure to recognize the linea

alba and to make the incision through it. Defective methods of closure relate chiefly to faulty principles in suturing. Defective methods of after-treatment relate chiefly to the application of the tight adhesive strap with pad, firmly compressing the incision. The methods recommended consist in a thorough cleansing of the abdomen by the application of, first, oil, next, ether with some strong alkali, cleansing with clear water, followed by the persistent application for over half an hour preceding the operation of a strong solution of bichloride of mercury. The incision should be made carefully in the median line and through the linea alba. The method of closure recommended is by interrupted suture of silkworm-gut, passed from within outward on both sides entirely through the tissues, but so passed that it enters the peritoneum near the margin of the wound, dips deeply into the median tissue, and is brought out through the integument near the wound margin. By this means all the structures are brought into immediate apposition when the sutures are tightened. They should not be tied tightly, and the knot should be on one or the other side of the incision.

The wound should be dressed with aristol or boracic acid, and a bandage carefully applied. When the sutures are removed a firmly-fitting adhesive strap should be applied, which does not exert such pressure as will induce compression of the incision with a subsequent tendency to separation of the internal margin. The advantages of the interrupted suture, as here suggested, consist, first, in the simplicity of application; second, in passing through and anchorage in the muscles; third, the apposition of like tissues to like tissues; fourth, painlessness after operation; fifth, minimum possibility of infection.

#### LAPARO-HYSTERECTOMY.

SENN (*American Journal of the Medical Sciences*, vol. cvi., No. 3), after a discussion of the indications and technique of laparo-hysterotomy, together with a report of two cases, submits the following conclusions:

1. Laparo-hysterectomy is justifiable when delivery through the normal passage is impossible without mutilation of the living child.

2. It is absolutely indicated where the conjugata vera is less than two and a half inches, when obstruction is due to fixed pelvic tumors and advanced malignant disease of the cervix.

3. Mutilating operations on a living child for the purpose of effecting delivery are no longer legitimate obstetric procedures, as laparo-hys-

terotomy and symphysiotomy are life-saving operations for both mother and child.

4. Hysterectomy after laparo-hysterotomy is only justifiable if the uterus itself is the seat of a life-threatening, removable disease.

5. Elastic constriction as a hæmostatic measure should not be resorted to in laparo-hysterotomy before the delivery of the child.

6. The uterine incision should be enlarged to the requisite extent by tearing for the purpose of diminishing hemorrhage.

7. The visceral wound should be closed by four rows of sutures applied in such a manner as to absolutely arrest the hemorrhage and completely separate the uterine from the peritoneal cavity.

8. Laparo-hysterotomy is also indicated in the operative treatment of single, large myofibroma of the uterus in young women when the tumor is located within or near the uterine cavity.

9. In such cases the uterine incision should be closed in the same manner as in operations on the pregnant uterus, and the bed of the tumor should be packed with iodoform gauze, which is brought through the cervix into the vagina, thus serving the double purpose of a hæmostatic tampon and capillary drain.

#### THE PRESENT STATUS OF THORACIC SURGERY.

GASTON (*Journal of the American Medical Association*, vol. xxi., No. 9), after discussing the various methods proposed, draws the following inferences:

1. All penetrating wounds of the thorax may be closed hermetically, by suture or otherwise, after allowing the discharge of fluid blood from the opening.

2. Foreign bodies lodged in the bronchi may be removed by incision of the trachea at the lowest available point.

3. Experiments on reaching the bronchi through the chest-wall afford little encouragement in undertaking operation upon the human subject.

4. Medication as a preventive and a curative agency in pleuritic effusion is worthy of trial before having recourse to aspiration.

5. Aspiration is indicated when there are large serous accumulations in the chest and likewise in pneumothorax, but cannot be relied upon for the relief of purulent collections.

6. Partial resections of ribs is attended with better results in some cases of empyema than the complete removal of the segments of several ribs.

7. The excision of a small portion of one rib with the introduction of drainage-tubes has been generally attended with good results.

8. Washing out the cavity of the chest is not requisite, except in contamination and decomposition of the contents.

9. The operation of thoracotomy for abscess and gangrene of the lung should be accompanied with antiseptic applications and with tamponage of gauze.

10. Tumors of the mediastinum may admit of interference, but further development of technique is necessary before the method can be generally advised.

#### ON A SIMPLE METHOD OF TREATING THE WOUND AFTER EXCISING HEMORRHOIDS.

JONES (*Provincial Medical Journal*, vol. xii., No. 140) recommends the following method of treating the wound after excision of hemorrhoids:

The hemorrhoid is placed within the clamp (Smith's by preference) and cut off, leaving about an eighth of an inch of pedicle. This cut edge is sewed with a catgut suture, the clamp removed, and the operation is complete. The best plan is to take a piece of catgut about eighteen inches long, with a needle at each end. One needle is passed through the upper end of the pedicle and a first knot is tied; then the needles are passed from left to right and right to left, and each time they cross the pedicle are tied. Except in the case of friable granular hemorrhoids, the cautery should not be used, as burning the pedicle of necessity means the subsequent separation of a slough.

#### DRAINAGE OF THE BLADDER BY MEANS OF AN OBLIQUE FISTULA AFTER SUPRAPUBIC CYSTOTOMY.

MARTIN (*Centralblatt für Chirurgie*, No. 47, 1893) advocates the method of oblique canalization, applied by Witzel, in the operation of gastrostomy, to drainage of the bladder after suprapubic section, and refers to one case contributed by Zweifel, in which a similar operation was performed after opening the peritoneal cavity for the extirpation of a carcinoma growing at the vesical orifice of the urethra. Martin operated on a man aged sixty-seven, suffering from retention of urine due to enlarged prostate. For seven years the patient had been compelled to use a catheter five times a day. Finally, he was not able to introduce the instrument, nor was the physician to whom

he applied any more successful. The bladder was distended so that it reached as far as the umbilicus. The prostate was markedly enlarged. It was found impossible to introduce an instrument by way of the urethra. The patient was put in the Trendelenberg position, and a three-inch incision was made, running down to the symphysis; the bladder was freely exposed; the peritoneal fold was found two inches above the symphysis and was easily pushed still farther upward by blunt dissection. The wound margins were drawn widely apart by means of retractors, and the whole anterior bladder-wall was exposed, so that the following manipulation was easily carried out: A trocar was thrust through the bladder-wall low down behind the symphysis, and a portion of black, blood-stained, offensive urine was withdrawn. The bladder-wall was fixed on each side of the canula by means of clamps; the opening through it was slightly enlarged by means of a bistoury, so that a Nélaton catheter of medium size could be passed through. This was secured to the bladder by means of a catgut suture, and then, by means of a series of sutures running at right angles to the long axis of the catheter, passing in and out of the bladder-wall to one side over the catheter and in and out on the opposite side, a canal was formed at the expense of the bladder-wall. This canal was two inches in length. The sutures were silk, and after they were tied they were reinforced by a continuous suture.

The wound was packed with iodoform gauze; the end of the catheter was brought out through its upper angle and was secured by means of an adhesive plaster. The healing of the wound was rapid, in spite of a severe venous hemorrhage, which recurred three times in twenty-four hours, but was stopped by means of ice and ergotine. This bleeding apparently came from wounds caused by violent attempts at catheterization. After three days the temperature was normal and the urine became clear and healthy in appearance. The urine escaped by means of a drainage-tube attached to the catheter. This instrument was changed on the twelfth day. On the introduction of a new instrument a very distinct elastic resistance was encountered. This was overcome by gentle pressure, and, the instrument entering, some urine flowed out. This resistance was evidently due to the reflex muscular contracture excited by instrumentation. After the fourth day the dressing was entirely dry. The fifteenth day after operation the patient was allowed to get out of bed. The end of a Nélaton catheter was fastened by means of a clamp and no urine flowed

by the side of the instrument. The capacity of the bladder rapidly increased, so that in a short time a pint could readily be retained without a drop escaping by the side of the catheter. The patient was perfectly comfortable, and four times a day released the clamp at the end of the catheter and evacuated the contents of his bladder.

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*RHYTHMICAL TRACTION OF THE TONGUE  
AS A MEANS OF RESUSCITATING  
THE ASPHYXIATED.*

LABORDE (*La Tribune Médicale*, No. 46, 1893), who first called attention to the value of rhythmical traction of the tongue as a means of stimulating respiration, has collected much evidence in regard to the value of this method as applied to cases of threatened death from asphyxia. Among the cases contributed, that of Denuce is very interesting. The surgeon was performing a tracheotomy on a patient suffering from neoplasm of the larynx. Chloroform was being given; this had been preceded by an injection of morphine. Respiration was entirely suspended; the patient became blue and, indeed, almost black from asphyxia. Although a canula was placed in the trachea, there was no effort at breathing. Rhythmical traction of the tongue was at once made, and finally respiration was restored.

Massé states that this method is an excellent adjunct to the other well-known resources in case of accident during anæsthesia. By this means he has been able to restore dogs apparently dead from the administration of chloroform. Sometimes respirations were not renewed until after ten minutes.

Ménière, while operating for caries of the mastoid process, the patient being under the influence of chloroform, perceived that breathing had stopped, and on examination could not detect any motion of the heart. The face was cadaveric in appearance. The child was turned head down, artificial respiration was started at once, and the tongue was seized in a pair of forceps and rhythmical tractions were made upon it. The first respiration was not noted for six minutes. The child recovered.

Laborde holds that in chloroform anæsthesia, when death is threatened from respiratory or cardiac syncope, or the two combined, the tongue method is the most powerful and rapid means of resuscitation, aiding not only the freeing of the throat, but actually stimulating respiration. He contributes a case of apparent death from violent shock of an electric current. The strength of the latter was more than two

thousand volts. The hand of the patient was burned and the body was black. The tongue was seized with a pair of forceps and rhythmic traction was made upon it for more than an hour, at the end of which time natural respirations were resumed and the patient recovered.

#### THE TREATMENT OF ACTINOMYCOSIS BY IODIDE OF POTASSIUM.

NETTER (*La Tribune Médicale*, No. 46, 1893) presents a patient cured of actinomycosis by medical treatment. This patient was a woman, always healthy until last August, when she suffered from a left sero-fibrinous pleurisy. There was slight amelioration of symptoms under salicylate of sodium treatment. This was followed by an aggravation of symptoms without apparent reason. For some time there was found beneath the left breast a patch of hard œdema about as large as the palm of the hand. In the middle of this patch there appeared a nodule as large as a walnut. This was located over the anterior extremity of the twelfth rib. This nodule softened, and on incision there was evacuated a small quantity of pus. The rib was not denuded, but the opening did not close, and there was a long fistulous tract. Since the general condition became more serious, and inoculation of the pleuritic fluid on a guinea-pig gave negative results, actinomycosis was suggested, and a daily systematic examination of the discharge was instituted. This resulted in finding the characteristic filaments. These were not found in the expectoration, from which fact the author concluded that the disease was probably located in the posterior mediastinum, the pus having made its way along the ribs and having caused by inflammation of the contiguous structure the sero-fibrinous pleurisy. Iodide of potassium was administered. This was followed by prompt recovery. The author reports two other cases of pleurisy excited by actinomycosis. He states that this disease is rare in France. He states, further, that one hundred and eighty-five oxen suffering from this disease were treated in Chicago with iodide of potassium, and that seventy-one of them were cured. It is probable that the iodide does not act as a specific, since it has been shown that the organism will grow upon gelatin containing one per cent. of the drug. It perhaps acts by augmenting tissue resistance.

Six successful cases are reported from Holland. The drug must be given in full doses,—80 grains a day at first; diminished as the physiological effect is produced.

#### THE NON-OPERATIVE TREATMENT OF SALPINGO-OVARITIS.

SHOEMAKER (*Journal of Surgery, Gynecology, and Obstetrics*, August, 1893) refers to the value of the conservative treatment of inflammatory conditions of the tubes and ovaries. He believes that removal of the appendages should not be advised until other treatment known to be carefully applied has failed. As a guide to prognosis without operation, he mentions the amount of organized adhesions and to some extent the amount of prolapse of the ovaries. Should the appendages be badly adherent and prolapsed, relapses are frequent, and no definite progress towards a real cure can be made, though all soreness be removed by treatment and the patient's condition remain satisfactory. He counsels the removal of diseased organs, where there is no reason to expect pus, in a small proportion of the cases of salpingo-ovaritis. These are cases where adhesions are insurmountable, and there seems to be valid ground for considering the lesion present to be the starting-point of a stubborn relapse. A careful use of iodine, ichthyol, boro-glyceride tampons, and elastic wool packing is indicated before the decision is made. The operation will be decided upon much earlier in a poor patient than in a woman of leisure. Where the lesions are not so gross as to make the decision for operation imperative, there must be weighed against removal the risk to life, the possible destruction of the sexual desire, the liability to hernia, the persistence of adhesions of the bowel, bladder, or omentum to the stump or cicatrix, the flushings and paræsthesia which book themselves about the monthly molimen, even though there be no flow.

Palliative treatment has failed not only in those cases where the anatomical lesions are not considered great enough to call for operation, but also in a few instances of serious type where the patient or her family refuse operation. While the idea of permanent and absolute cure must be dismissed, the patient can be made comfortable. The treatment usually lasts several months, sometimes for two or three years.

#### ICHTHYOL IN ERYSIPELAS.

THOMAS (*Liverpool Medico-Chirurgical Journal*, July, 1893) refers to the treatment of erysipelas by ichthyol, and mentions four cases so treated, three of which were complicated by large surgical wounds. The onset of the disease was sudden and the temperature high. As a result of the treatment the disease was cured

on the fifth day. In only one case was there sleeplessness. None required stimulants, and all experienced great relief from pain after each application of the remedy. Success in this treatment depends upon a very thorough rubbing of a strong ointment of ichthyol with vaseline or lanoline into the red area and into the adjoining healthy skin, covering the parts with a sheet of lint or the ordinary surgical dressing.

*ABDOMINAL SECTION WITH ENTER-  
ORRHAPHY FOR GUNSHOT  
WOUNDS OF THE  
INTESTINES.*

BRADY (*International Journal of Surgery*, August, 1893) reports twenty-eight cases of gunshot wounds of the intestines operated upon by abdominal section at the Charity Hospital, New Orleans, with a total of nine recoveries. This does not include those cases of abdominal section in which the liver, spleen, or bladder alone was injured. No stress has been laid upon the existence of peritonitis, either plastic or purulent, previous to the operation, though this existed in about one-third of the cases operated upon, owing to the long time which had elapsed between the receipt of the injury and the operation. Of three wounds of the stomach, all died. Of three wounds of the colon, all recovered. Of thirteen wounds of the small intestines, six recovered. He believes that cleansing of the abdominal cavity is of the utmost importance and should be carried out with every care. This can be done by introducing a constant stream of sterilized water at a temperature of from 110° to 115° F. to the bottom of the cavity by means of a rubber tube of large calibre attached to a funnel. He objects to the use of absorbent cotton for sponging, as frequently this material has been detected in a post-mortem examination where cotton has been used during the operation. For suturing the bowel he uses silk.

As regards the nourishment after the operation, he thinks small quantities of liquid food administered at frequent intervals by rectum or mouth, according to the relative situation of the wound, would place the patient in better condition than where food is withheld for the first twenty-four hours. A wound of the stomach does not seem to preclude the administration of two ounces or more of predigested milk, together with half an ounce of brandy by the rectum, within twenty-four hours after the injury. Should a like wound of the colon be present, he gives the same food by the mouth, at equal intervals. These patients usually die of peri-

tonitis or exhaustion. The treatment of this is largely directed to maintaining strength until the violence of the attack has abated, so that by excessive caution in the administration of food the patient is handicapped in his fight for life.

*ISCHIO-PUBIOTOMY.*

HENDERSON (*Lancet*, August, 1893) reports the following case from notes of Pinard and Farabeuf. The patient, a thirty-two-year-old fivepara, was delivered at term of a living child by ischio-pubiotomy. She was delivered of her first child by version and basiotripsy upon the after-coming head. In her second labor she was attended by Pinard, who induced premature labor. The child was delivered by version, difficulty being met with in extracting the head. The child died in its fifth month. Her third child was delivered at term. After six ineffectual attempts with the forceps, version and an attempt at craniotomy, the seventh application of the forceps to the after-coming head, and finally traction upon the trunk, assisted by pressure upon the abdomen, her fourth child was delivered prematurely by forceps, child dying from prolapse of the cord. During her fifth pregnancy she consulted Pinard, and expressed the desire to give birth to a living child at all costs. It was first supposed that the child could be delivered by symphysiotomy. Repeated examinations, however, convinced him that there was ankylosis of the right sacro-iliac synchondrosis, and the operation of symphysiotomy was therefore inapplicable.

Pinard then consulted with Farabeuf, who calculated that if the margins of the obturator foramen of the ankylosed side were cut in two places as far from the mid-line as possible, the passage of a large head would be easy. The woman was, therefore, allowed to go to term. The operation was begun fourteen hours after the advent of labor. The ischio-pubic ramus and the horizontal ramus of the pubes on the ankylosed side were successively sawed through five centimetres from the median line. Tarnier's forceps was applied above the brim, and an infant weighing almost eight pounds was extracted without difficulty. The operation was simple, the only difficulty experienced being in passing the chain-saw around the horizontal ramus of the pubes. Hemorrhage was slight. The spontaneous separation after section of both rami amounted to two and six-tenths centimetres, and was increased four centimetres during the extraction. The soft parts alone were sutured. A bed-sore in the sacral

region was the only complication. Sutures were removed on the eighth day. Three days later the patient sat up, and on the thirty-second day she was able to walk and stand without difficulty.

#### TREATMENT OF SKIN CANCER.

In the discussion over Lassar's contribution upon this subject, read before the Berlin Medical Society (*Monatshefte für Praktische Dermatologie*, Bd. xvii., No. 10), KÖBNER held that the cases presented by Lassar were not conclusive, since Langenbeck had presented a similar favorable result from arsenic treatment, the patient, however, perishing a year later from recidivity. In Lassar's second case the diagnosis is not assured; in the third case the patient is not fully healed. Köbner holds that arsenic and all other remedies administered by the mouth are utterly without power, and that cure is never accomplished, excepting when the ulcer is completely removed by means of a knife in the early part of its course. Only when patients present themselves too late for operation should resort be had to medical treatment.

Bergmann gave the history of three cases in which ten, seven, and five years respectively had passed without recurrence. In considering the radical cure of skin cancer it must be remembered that cicatrization is followed by destruction of cancer cells. Such cicatrization may take place quite independently of any therapeutic treatment. Under some circumstances carcinoma will last twenty years and then undergo cicatrization. Small clusters of cells may remain latent for years. Following seborrhœa, ulcers develop which closely resemble carcinoma. Before a physician recommends internal treatment he should remember that these skin cancers frequently do not recur when thoroughly removed by the knife. Lassar, in answer to these criticisms, stated that he exhibited his patients simply to show that by arsenic treatment carcinomatous nodules in the face were prevented from running their customary course.

#### BLOODLESS AMPUTATION AT THE HIP-JOINT.

WYETH (*Medical News*, vol. lxiii., No. 24) describes at length his method of performing bloodless amputation of the hip-joint.

With the patient in the usual position for a hip-joint amputation, the limb should be emptied of blood, either by elevation of the foot

and lowering of the trunk, or by the Esmarch bandage applied from the toes to the trunk. Under certain conditions the bandage can be only partially or may be not at all applied. When a tumor exists, or when septic infiltration is present, pressure should only be exercised not quite to the diseased portion for fear of driving septic matter into the vessels. After injuries attended with great destruction, crushing, or pulpification, of course the Esmarch bandage is not applicable, and one must trust to elevation to save as much blood as possible.

While the member is elevated, or before the Esmarch bandage is removed, the rubber-tubing constriction is applied.

The object of this constriction—and this is the chief point in the method—is the absolute occlusion of every vessel at the level of the hip-joint safely above the field of operation.

To prevent any possibility of the tourniquet slipping, Wyeth employs two large mattress-needles or skewers, about three-sixteenths of an inch in diameter and ten inches long, one of which is introduced one inch below the anterior superior spine of the ilium and slightly to the inner side of this prominence, and is made to traverse superficially the muscles and fascia on the outer side of the hip, emerging on a level with and about three inches from the point of entrance.

The point of the second needle is made to enter one inch below the level of the crotch, internal to the saphenous opening, and, passing squarely through the adductors, comes out an inch below the tuber ischii. The points are at once shielded by bits of cork to prevent injury to the hands of the operator. No vessels are endangered by these skewers. A piece of strong white-rubber tube, half an inch in diameter and long enough when tightened in position to go five or six times around the thigh, is now wound very tightly around and above the fixation-needles and tied. If the Esmarch bandage has been employed, it is now removed.

In the formation of flaps the surgeon must be guided by the condition of the parts within the field of operation. When permissible, the following method seems ideal: About six inches below the tourniquet a circular incision is made, and this is joined by a longitudinal incision, commencing at the tourniquet and passing over the trochanter major. A cuff that includes the subcutaneous tissues down to the deep fascia is dissected off to near the level of the trochanter minor. At about the level of the trochanter minor the remaining soft parts,



together with the vessels, are divided down to the bone by a circular cut, and, in order to facilitate the search for the vessels, the soft parts are rapidly removed from the femur for several inches below the line of the divided muscles. At this stage of the operation the larger vessels, veins as well as arteries, should be tied with good-sized catgut. As suggested by Professor Murdoch, of Pittsburg, Wyeth leaves the entire extremity intact and uses the full length of the limb as a lever in dislodging the head of the bone.

When the larger and easily-recognized vessels have been secured, the muscular attachments to the upper extremity of the bone are lifted off with scissors or knife, keeping along very close to the bone. Holding the soft parts away with retractors, the capsular ligament is exposed and divided in its circumference. Forcible elevation, abduction, and adduction of the thigh permit the entrance of air into the socket and at the same time rupture the ligamentum teres, and the disarticulation is thus easily and rapidly effected.

Properly conducted up to this point, not a drop of blood has escaped, except that which was in the limb below the constrictor when this was applied. If now the tourniquet be carefully and gradually loosened, each bleeding-point may be determined and the forceps applied as required until the tube is entirely removed.

Should any difficulty be encountered in the effort at enucleation (which is scarcely possible), the same precaution in securing all bleeding-points should be exercised in removing the tourniquet, and enucleation completed with the tourniquet out of the way.

There remains the closure of the wound, with the usual precaution of drainage. Wyeth prefers silk-worm-gut for suture material, and one good-sized rubber drain from the acetabulum out through the most dependent part of the wound.

#### TREATMENT OF ALOPECIA.

FERRAS (*Annales de Dermatologie et de Syphiligraphie*, tome iv., No. 10) holds that alopecia should be treated not only by local applications, but by remedies which influence the entire system. He commends baths, thirty to forty minutes' duration, of strong sulphur-water. These are followed by massage for ten or twenty minutes and hot spray lasting for from three to five minutes. A half-pint of sulphur-water is taken morning and evening. Locally, he commends the use of tincture of iodine and hot sulphur-water sprays.

#### SUCCESSFUL TREATMENT OF SEPTIC THROMBOSIS OF THE LATERAL SINUS.

VICKERY (*British Medical Journal*, No. 1717, 1893) reports a successful operation for the relief of septic thrombosis of the lateral sinus, calling attention to Lane's seven successes out of eight operations.

The patient was a boy of eight years, who had always been healthy, with the exception of slight bilious attacks. About two years ago he had an attack of measles. He had suffered from intermittent purulent discharges from the right ear. In June, 1893, the discharge stopped, and was followed by severe earache, slight rise of temperature, puffiness over the parotid region in front of the tragus and behind the angle of the jaw, and tenderness on palpation in the same region. This was not noted over the mastoid. In a few days there was some subsidence of local symptoms, but this was shortly followed by distinct rigor, pain in the neck, and stiffness. The rigor was repeated; the temperature ran up to 104.6° F., pulse to 120. The neck was rigid, distinctly swollen, and on palpation tender; enlarged glands were felt, extending from below the pinna down to the middle of the neck, along the carotid sheath. Vomiting, rigors, fever, and the other symptoms continued for several days. Operation was performed June 19. A three-inch incision was carried along the anterior border of the sternomastoid, the centre of the incision being at the level of the cricoid and exposing the internal jugular vein, shelling out some inflamed glands on the way. No thrombosis was found, but the blood-stream was apparently very sluggish. A ligature was placed round the vessel at the lower end of the wound, when the vein immediately collapsed. This clearly pointed to blocking of the circulation on the cerebral side. A semicircular flap was dissected down and a trephine applied, the centre of the instrument being over the posterior inferior angle of the parietal bone. The sinus was seen to contain fluid, but as it had a yellowish appearance, as if it might contain pus, a free incision was made into it. If there was any pus, it came with the first rush of blood. The free hemorrhage was immediately stopped by a pad of iodoform gauze, and then uniting the flap over the pad, tying the first half of the ordinary surgeon's knot and leaving the end long. The neck wound was sutured and dressed. Pulse and temperature dropped promptly. His pain was relieved, but on the following evening there was a rigor, accompanied by vomiting,

purging, a rise in temperature and pulse-rate. Temperature dropped during the night, pulse keeping rapid. The following day there was noted a tender swelling on the palmar surface of the first phalanx of the middle finger, extending on to the palm. No fluctuation was then apparent. On the afternoon of that day there was another severe rigor, accompanied by purging and vomiting. On the evening of the same day his temperature was normal, his pulse stronger. Ultimately the palmar abscess was incised. This was followed by one or two rigors. The patient finally made a good recovery.

Vickery states that the explanation of the case seems to be that there was a septic thrombosis of the lateral sinus sufficiently advanced to have reached the general circulation before operation, and to have occasioned the palmar abscess and the rigor subsequent to the first operation.

In relation to this case, Marsh reported a similar one in which opening of the mastoid antrum and evacuation of fetid pus had not been followed by improvement. To prevent further purulent absorption the internal jugular was exposed and ligated. The operation was not followed by bleeding, showing that the lateral sinus was blocked. This vessel was cleared out as far as possible; but at the time of the report the child's condition was not materially improved.

#### TREATMENT OF PRURITUS.

In the discussion of a paper on this subject by BRONSON a number of interesting points are brought out. Bronson held (*Journal of Cutaneous and Genito-Urinary Diseases*, vol. xi., No. 135) that the underlying condition of pruritus is hyperæsthesia, hence the prime indications in the treatment are to allay or annul excess of nervous excitement. Measures to remove local excitants include such as directly tend to prevent scratching. To admonish the patient to restrain from this is usually of little avail. Restraint may be possible during waking hours, but at night, when the trouble is always at its worst, and especially during the state of somnolence midway between sleeping and waking, no power can prevent it. It can only be avoided by first mitigating the lesion through the aid of antipruritics. Sedatives, when used internally, are apt to be disappointing, and indeed after their use general hyperæsthesia is usually exaggerated. Narcotics are especially objectionable. Bromides are often

indispensable and may be required in full doses. To avoid the weakening effects of insomnia, sulphonal or some other hypnotic is occasionally needed. In addition, two internal remedies are worthy of mention; these are cannabis indica and gelsemium. Carbolic acid, characterized by Unna as the opium of the skin, is the most useful antipruritic agent possessed by the dermatologist. The following antipruritic oil is warmly commended, and it is stated that it never causes any results more serious than a trifling dermatitis:

R Carbolic acid, ʒi;  
Liquor potass., ʒi;  
Ol. lini., ʒi.  
Sig.—Shake before using.

A drop or two of the oil of bergamot will cover the linseed oil. Salicylic acid and salol act much as does carbolic acid. Thymol is often valuable, but also is irritating to sensitive skins.

Pruritus hyemalis is prevented by guarding against cold, since the sole cause of this distressing affection is lowered temperature.

Hyde, in commenting upon these conclusions of Bronson, stated that he has long since dropped cocaine, since it is extremely liable to develop the habit. He alluded to two methods of treatment, both of value. The first consists in exclusion of air. Thus some of the successful pastes depend for their beneficial effect upon this action. Another method of relieving pruritus, when it is circumscribed and strictly limited to one side of the body, is in treating the other and corresponding side with substitutive stimulants. A case is narrated in which a patient had long suffered from an almost intolerable pruritus of one leg. Relief was obtained only after stimulating the other corresponding side of the body. Hyde called attention to gout as a frequent cause of pruritus. Next in importance he names diabetes.

Corlett states that in prurigo hyemalis the internal administration of ichthyol has apparently given him excellent results. He applies lanolin to the skin locally after the surfaces have been bathed. Resorcin has given better results than any other drug. This is used in the strength of three to five per cent., and is applied in aqueous solution.

Morrow condemns the use of gelsemium, and states that he has had excellent results from the employment of the hot-water bag applied to the spine. Indeed, he lauds this treatment above all others in certain obstinate cases occurring in people. Among the local remedies he has had the best results from a combination of car-

bolic acid and camphor. He uses this in the strength of one and two drachms of each drug to the ounce of zinc ointment. Another excellent remedy is salicylic acid made up in the form of wax and spermaceti, in the form of an ice, or in rose-water in the form of a solution.

Hardaway states that, in addition to the remedies already mentioned, there are three drugs which he gives with sometimes successful results. These are quinine in 10- or 15-grain doses at night, wine of antimony given in divided doses during the day, and pilocarpine by the mouth or hypodermically, especially where the skin is harsh and dry. He holds that carbolic acid as a local application stands at the head of the antipruritics, but prefers to have it sprayed on by means of an atomizer.

Denslow calls attention to the value of ergot.

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## Reviews.

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A MANUAL OF PRACTICAL HYGIENE DESIGNED FOR SANITARY AND HEALTH OFFICERS, PRACTITIONERS, AND STUDENTS OF MEDICINE. By W. M. L. Coplin, M.D., and D. Bevan, M.D. Illustrated. Philadelphia: P. Blakiston, Son & Co., 1893.

The average book upon hygiene is either devoted to trivialities and designed for common-school purposes, or, like Parke's celebrated manual, is so thorough and exhaustive as to be exhausting as well to any one who desires to obtain scientific information without reading a large amount of statistics and studying many pages of text. The authors of this book of four hundred and fifty pages have endeavored to fill the space lying between these two forms of hygienic literature, so to speak, and we think they have succeeded. Many of the illustrations are original, being drawn by Dr. Bevan, and the authors have taken much pains to include in the work new facts concerning climate and cognate subjects. Their positions at present and in the past, in connection with the government service and as pathologists or bacteriologists to large hospitals, have given them ample opportunities to study the needs of the class of persons for whom the book is destined, and the large experience they have had in teaching institutions has taught them in turn how to state facts in such a way that the scholar may readily grasp them. We feel confident that this book will be appreciated by those for whom it is written, and that it will be a constant source of credit to its indefatigable and careful authors.

MANUAL OF PHYSICAL DIAGNOSIS FOR THE USE OF STUDENTS AND PHYSICIANS. By James Tyson, M.D. Second edition, revised and enlarged.

Philadelphia: P. Blakiston, Son & Co., 1893.

If Dr. Tyson has one *forte* above another it is his ability to use his pen in such a way as to make descriptions of medical facts clear and interesting to the student or physician. His articles are perhaps more widely quoted than those of almost any other writer in the medical journals of the day, and the various brochures which he has published from time to time have been read by the profession with avidity. The second edition of his little work on "Physical Diagnosis" bids fair to be even more successful than his other contributions to medical literature. The ideas are clearly expressed, and a certain number of clear diagrams accompany the text to make the descriptions readily understood. The smallness of the work, its completeness, and its comparatively low cost, added to the advantages which we have already named, will be strong aids in causing its still further employment during student days.

BURDETT'S HOSPITAL ANNUAL AND YEAR-BOOK OF PHILANTHROPY. 1893.

London: The Scientific Press, Limited.

To those who are interested in the subject of hospital management this book will bring a large amount of exceedingly valuable information. In addition to its text, which is very carefully prepared, a number of tables are given, showing the cost of maintaining various kinds of hospitals all over the world and the names of nearly all the prominent hospitals in the world, especially in the English provinces and in America, with information concerning their staffs, income, cost of maintenance, and methods of nursing. While it deals naturally to a great extent with English institutions, far more credit has been given to and pains taken in regard to American hospitals than is ordinary in such international publications.

THE PHYSICIAN'S VISITING-LIST FOR 1894.

Philadelphia: P. Blakiston, Son & Co., 1893.

Forty-three years of experience in preparing a list for the physician has enabled the publishers of this well-known pocket-book to arrange a large amount of condensed information without making their book difficult of being carried in the pocket. It is especially to be commended for the pliability of its cover, the lightness of the paper which it contains, and the conveniences offered for entering a record of patients.

THE MEDICAL NEWS VISITING LIST, 1894. THIRTY PATIENTS PER WEEK.

Philadelphia: Lea Brothers & Co., 1893.

This "Visiting-List," which we have found to be very useful, contains, in addition to its well-arranged blank pages, information, in a brief form, in regard to the period of dentition, estimating the day of confinement, the thermometric scales, weights, and measures, including the metric system, two or three pages upon the examination of the urine, a page on artificial respiration, a table of the eruptive fevers, a list of poisons and their antidotes, and, finally, a table of doses arranged in two columns, which give the amounts in Troy weight and the metric system. One of the most useful parts of the List to the physician who is called to an emergency is the brief space given to the ligation of arteries, accompanied by a diagram showing where the incision should be made for the ligation of blood-vessels. Notwithstanding the large amount of material contained between the covers of this book, it is much less bulky than would be supposed and can be readily carried in the pocket.

A MANUAL OF DISEASES OF THE EAR. By G. P. Field, M.R.C.S., Aural Surgeon to St. Mary's Hospital, London. Fourth edition. Three hundred and seventy-one pages. Illustrated with colored plates and woodcuts.

Philadelphia: Lea Brothers & Co., 1893.

The new edition of this excellent manual of the ear and its diseases covers the field of otology in nineteen concise and practical chapters. We desire to call attention to the enormous amount of excellent material that this little volume contains and the instructive and comprehensive manner in which the subject is handled. The author's views are so plainly and forcibly expressed that the student and general practitioner of medicine cannot afford to be without their teaching and careful guidance if he would do the justice to his patient that the present advanced state of otology legally demands.

Some forty pages are devoted to a careful review of the minute anatomy and physiology of the ear. The subject of chronic suppurative inflammation and its results is ably discussed in four chapters, which comprise the most important part of the work. In these chapters will be found sound and trustworthy advice on aural polypi, facial paralysis, caries and necrosis, mastoid and brain abscess, phlebitis and pyæmic thrombosis of the lateral sinus, as well as visceral sequelæ, the result of chronic aural discharge. We are pleased to find the author

so strong an advocate of properly-conducted irrigation in suppurative diseases of the ear, as this is undoubtedly the only means by which we can obtain thorough asepsis in a large proportion of our cases.

A wholesome conservatism is a marked feature throughout the book, and yet it is gratifying to find that in selected cases the author strongly advocates the intratympanic surgical methods that have met with such marked success in the hands of many aurists in this country. This observation applies particularly to the treatment of that large class of otherwise incurable cases which are discussed under the head of "Chronic Suppurative Inflammation with Caries and Necrosis." To quote the exact views of the author, "After sequestra, granulomata, and cholesteatomatous masses have been removed, all carious areas must be cautiously but thoroughly *curetted*."

The brief space allotted for this review will not permit of extended comment; suffice it to say, however, that within the covers of this book will be found information sufficient to supply the needs of the student and practitioner of general medicine in all practical matters pertaining to diseases of the ear.

S. MACC. S.

MENTAL NURSING: A TEXT-BOOK FOR ASYLUM ATTENDANTS AND NURSES. By William Harding, M.D. London: The Scientific Press, Limited, 1893.

This small volume consists of a number of exceedingly practical chapters upon the character and the management of the insane from the stand-point of the nurse. The first three chapters consist of the discussion of some important elements of anatomy and physiology, and also deal with the nature of fractures, wounds, hemorrhage, heart-disease, food, strangulation, poisoning, burns, etc. Following this the nurse receives some very practical hints regarding the nature of insanity, special stress being laid upon the fact that insanity is a bodily disease. Next comes some very practical advice on ventilation, warmth, cleanliness, the manner of feeding the insane and their general management. Very practical advice is given regarding the tact to be observed in dealing with delusional and with dangerous lunatics. The matter of social entertainment for the insane, night nursing, and the management of the bedridden insane completes these very valuable lectures.

The book is one which not only commends itself to asylum nurses, but to general nurses as well.

F. X. D.

OUTLINES OF INSANITY. DESIGNED FOR THE USE OF MEDICAL PRACTITIONERS, JUSTICES OF THE PEACE, AND ASYLUM MANAGERS. By Francis H. Walmsley, M.D.

London: The Scientific Press, Limited, 1893.

These outlines, being intended for lay as well as medical readers, are as much as possible divested of technicalities. The subject is presented in a concise, clear, and somewhat popular manner. The classification of insanity adopted is, of course, purely clinical, types only being considered.

The first and second chapters deal with normal and abnormal mental action, while the insanities themselves are considered in the following order: Melancholia, mental stupor, mania, puerperal insanity, dementia, weak mind, alcoholic insanity, epileptic insanity, general paralysis of the insane. The final chapter is devoted to the causes of insanity. An appendix then follows upon the care and treatment of the insane, lunatic hospitals, and upon actions in lunacy against medical men.

The book is exceedingly practical, and not only of value to the lay reader, but also to students and men in general practice whose time is limited, or to whom larger works upon insanity are inaccessible. F. X. D.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. Edited by Charles E. Sajous, M.D., and seventy associate editors, assisted by over two hundred corresponding editors, collaborators, and correspondents. Illustrated. Five volumes.

Philadelphia, New York, Chicago, and London: The F. A. Davis Company, 1893.

The appearance of the "Annual of the Universal Medical Sciences" is an event looked forward to with eagerness by practically every writer and advanced thinker in the country, and no doubt each of these, on the receipt of his volumes, turns to see if his most cherished contributions to medical literature have received due credit. In the great majority of cases he will not be disappointed, though even five volumes, each numbering about five hundred pages, do not give enough space to include all that has been contributed to medical science during the year. The omissions are, for the most part, unimportant.

To the active editorial staff have been added Dujardin-Beaumetz, Richardson, Lépine, Buxton, Apostoli, Obersteiner, and others of equal note, thus giving the production an international character.

In the preface the editor pays a well-deserved tribute to the value of the scientific work contributed by American authors, and calls attention to the fact that these works, for the most

part, remain unseen on the continent of Europe.

In the first volume are taken up Diseases of the Lungs and Pleura, the Heart and Blood-Vessels, the Alimentary Tract and its Associated Glands, the Urinary Apparatus, Diabetes, Fevers, Rheumatism and Gout, Diseases of the Blood, and certain of the contagious diseases. Among the list of editors the names of Dolley, Benjamin Ward Richardson, Dujardin-Beaumetz, James Wilson, and F. P. Henry are notable, and assure the thoroughness and accuracy with which their several subjects are summarized.

The second volume is taken up with Diseases of the Nervous System, of the Genital Tract of Women, Obstetrics, Diseases of the New-Born, and of Infancy and Childhood. In this volume the work of Landon Carter Gray, writing of Diseases of the Brain; of Montgomery, upon Diseases of the Ovaries and Tubes; of Baldy; and of Starr and Powell, upon Dietetics and Gastric Disorders of Infancy, is particularly to be commended.

Volume III. is devoted to Surgery. Pilcher and Lloyd have summarized all that has been contributed to the Surgery of the Brain, the Spinal Cord, and the Peripheral Nerves. Gaston has collected the contributions of the year on Thoracic Surgery. John Packard has given an admirable *résumé* of Surgery of the Abdomen. Kelsey contributes a very brief and most excellent section upon Diseases of the Rectum and Anus. Keyes and Fuller have admirably summarized Genito-Urinary Surgical Diseases. The subjects of Syphilis and Chancroid are completely covered by J. William White, assisted by Furness: White's name is a sufficient guarantee of the value of this article. Lewis and Reginald Sayre have summarized the advances in Orthopædic Surgery. Stimson, on Fractures; Matas, on Aural and Facial Surgery, this article being especially full; Laplace, on Surgical Mycoses; Tiffany and Warfield, on Surgical Diseases; Booth, on Traumatic Neuroses; Packard, on Antiseptics and Surgical Dressings; and Buxton, on Anæsthetics, complete this volume. Laplace's article on Mycoses is particularly noteworthy.

The fourth volume is taken up with Diseases of the Skin, Eye, Ear, Nose and Throat, Larynx and Oesophagus, Thyroid Gland, Local Medicine, Demography, Microscopy, Histology, and Bacteriology. Van Harlingen and Oliver, as usual, have contributed, each in his own department, articles which for thoroughness and discrimination are surpassed by none in the entire selection. The section on Intubation

ing the packing is dispensed with and the wound dressed antiseptically.

In following out this radical method of treating mammary abscess a large amount of healthy gland tissue must necessarily be destroyed; and the removal, as well as repacking, of any large quantity of gauze is a painful operation, especially so to women during the puerperium. We know from practical experience how trivial are the causes which elevate a patient's temperature after confinement, and dressings which are painful and frequently repeated must necessarily have a depressing effect during this period.

In private practice, unless it be a matter of life and death, the question of how much pain and discomfort we can avoid for our patients is one always to be carefully considered and an important factor in our success, and one frequently overlooked by men of large hospital experience.

On the other hand, I must confess that the simple opening of a mammary abscess, under all antiseptic precautions, and the thorough drainage with gauze or tube, is not as satisfactory an operation in this region as in other parts of the body. Owing to the large amount of areolar tissue, the induration around the abscess is apt to be considerable, and frequently becomes the source of other foci of pus, which, in turn, we are obliged to evacuate. If the patient be of a strumous constitution, or weak and debilitated, this condition of suppuration may last for days and the breast become riddled with sinuses.

Now, the treatment which I have adopted during the last few years is less painful, more simple, and has given in my hands most satisfactory results. Mammary abscesses will take place in the hands of the most skilful obstetricians and notwithstanding the most scrupulous care and attention to the nipples. The trouble, I believe, is not so much due to the entrance of pyogenic bacteria into the ducts, since these have been conclusively shown to be present normally in the milk before its exit from the gland, as it is due to local obstruction in the ducts or a stasis in the circulation of the capillaries and lymphatics.

During the state of congestion the liberal use of acetate of potassium and the local application of hot flaxseed poultices will frequently relieve vascular engorgement and prevent suppuration; but as soon as the temperature fluctuation or local oedema points conclusively to the presence of pus, a few simple incisions under all antiseptic precautions must be practised and a moist antiseptic dressing applied. But at the end

of twenty-four or thirty-six hours it is my custom to discard all antiseptic dressings and apply every three or four hours strips of flannel or lint soaked in hot sterilized spermaceti oil. The discharge of pus will cease within a day or two and the temperature drop to normal, even if the induration does not at once disappear. The strips of lint or flannel are covered with oil silk and firm pressure is applied with a bandage. The objectionable odor of the oil can be disguised with a few drops of bergamot or gaultheria. It is a dressing much more comfortable and grateful to patients than the moist bichloride or iodoform gauze.

In treating the simple acute adenitis so frequently met with in strumous children, this oil thickly spread over a flaxseed poultice has given most excellent results.

I do not pretend to explain how or in what manner the oil acts, but the fact remains that in my hands it has been so far the most satisfactory method of treating mammary abscess.

D. T. LAINÉ.

MEDIA, PA., December, 1893.

#### NATURE AND TREATMENT OF ULCERS OF THE CORNEA COMPLICATED WITH HYPOPYON.

VALUDE makes the following abstract of a Paris thesis, by Belohous (*Annales d'Oculistique*, October, 1895). The author, after showing the different known methods of treatment of this affection, lays down the following general principles: In children, ulcers of the cornea without hypopyon, being closely connected with scrofula, ought to be treated with a tonic medication and with suitable topical applications. Ulcers with hypopyon in adults are of an infectious nature, and demand, above all, antiseptic treatment. In adults, the dry occlusive dressing with iodoform used by Valude succeeds very well in all ulcers with hypopyon uncomplicated with blennorrhoea of the lachrymal sac, with conjunctivitis, or with chronic rhinitis and ozaena. In these cases the prognosis with this method of treatment is favorable. Complicated hypopyon ulcers resist every antiseptic treatment so long as the infectious conditions which are the cause are not cured. Paracentesis of the cornea and actual cauterization are indicated only for complicated hypopyon ulcers which resist ordinary treatment, and under these circumstances the prognosis is gloomy.

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## Original Communications.

### THE TREATMENT OF GLEET, DUE TO PRESENCE OF STRICTURES OF LARGE CALIBRE.

BY H. M. CHRISTIAN, M.D.,  
Chief of Genito-Urinary Clinic, University of Pennsylvania,  
service of Dr. Edward Martin.

**S**TRICTURE of the urethra is considered at the present day by all authorities in genito-urinary surgery to be one of the most frequent causes in the production of gleet. When the

stricture is located in the penile urethra, posterior to the corona glandis, gradual dilatation, by the frequent passage of sounds, will, in the vast majority of cases, cure the gleet. In those cases, however, of gleet depending upon the presence of strictures of large calibre at or near the meatus, simple dilatation by sounds is not apt to prove very successful in stopping the discharge.

The unsatisfactory results obtained from dilatation of strictures in this locality depends, in the first place, upon the fact that they belong, for the most part, to that class of stricture known as resilient, or elastic,—a form of stricture which is, as is well known, not amenable to simple dilatation. A second cause for the fail-

ure of dilatation to cure these strictures is to be found in the fact to which Dr. J. W. White has called attention, that, owing to the very abundant nerve-supply of the glans penis, dilatation to anything like the proper calibre gives rise to considerable pain and irritation, sufficient at times to produce a simple urethritis, or marked reflex irritation in the deep urethra.

Another form of stricture in this locality, which often acts as a powerful factor in the production of gleet, is the congenital stricture of the meatus. About twenty per cent. of the cases of gleet treated at the Genito-Urinary Dispensary of the University were found to present a condition of abnormal narrowing of the meatus. Division of the meatus to the proper calibre was invariably followed in a short time by a cessation of the gleet discharge.

In all cases of chronic urethral discharge presenting themselves for treatment at the Dispensary, where the bulbous explorer demonstrates the presence of either of the above-mentioned forms of stricture, the practice is to immediately divide the stricture to what is considered the normal calibre. This plan of treatment has almost invariably been followed by a very rapid cure of the gleet.

The books of the Dispensary contain the histories of forty cases of chronic urethritis treated in this manner during the past year and a half, all of which recovered entirely in from two to four weeks after the strictures were divided.

The following is the history of a few of the cases treated, and may be taken as a fair sample of the other cases.

It will be noted that the scale adopted to measure the normal dilatability of the urethra is that proposed by Dr. White, and differs from that employed by Dr. Otis in the fact that it is graded lower, as follows:

A penis, the circumference of which one inch posterior to the corona is three inches, should take normally a twenty-six to a twenty-eight sound (French scale). When it is three and-a quarter inches, a twenty-eight to a thirty sound; three and a half inches, thirty-two to thirty-four sound.

CASE I.—R. E., aged nineteen; has had gonorrhoea twice; last attack followed by gleet.

*Present Condition.*—Meatus glued in morning for past nine months; no history of frequent or imperative urination; clap shreds in first portion of urine passed.

*Examination.*—C. P. (circumference of penis),  $3\frac{1}{2}$  inches; meatus, 18 (F.) calibre.

*Treatment.*—Meatus divided to 30, followed by daily passage of 30 sound through meatus for four days, then at intervals of three days.

Gleet cured in two weeks.

CASE II.—P. H., aged thirty; two attacks of gonorrhoea; has had gleet discharge in morning for past seven months; clap shreds in urine; no frequent or imperative urination.

*Examination.*—C. P.,  $3\frac{1}{4}$ ; meatus, 14 calibre.

*Treatment.*—Meatus cut to 28, followed by passage of 28 sound in the usual method.

Discharged cured in ten days.

CASE III.—H. B., aged twenty-three; gonorrhoea three times; has had gleet for two months; been using injections; complains of morning drop; no discharge through the day.

*Examination.*—C. P.,  $3\frac{1}{4}$ ; stricture, 22 calibre, one-half inch from meatus.

*Treatment.*—Stricture divided to 28, followed by passage every four days of 28 and 30 sound.

Discharged cured in two weeks.

CASE IV.—S. G., aged twenty-two; gonorrhoea four times; last attack complicated with epididymitis and posterior urethritis; has had gleet for past four months.

*Examination.*—C. P.,  $3\frac{3}{4}$ ; stricture, 24 calibre at one-quarter of an inch.

*Treatment.*—Stricture cut to 32, followed by passage of 32 and 34 sound at regular intervals.

Cured in five weeks.

CASE V.—P. G., aged thirty; has had gonorrhoea three times; contracted last attack one year ago; discharge profuse for one month; had posterior urethritis; has had gleet discharge in morning for past ten months.

*Examination.*—C. P.,  $3\frac{3}{4}$ ; stricture, 26 calibre at one-half inch; no deep stricture.

*Treatment.*—Stricture divided to 32, followed by passage of 32 and 34 sound at regular intervals.

Discharge ceased at end of three weeks.

These few cases, taken at random from the records of the Dispensary, may be considered fairly typical, an almost equal amount of success following in all cases in which this line of treatment was pursued. It should be noted that in the examination of all of these cases great care was taken not to consider as strictures either points of physiological narrowing of the urethra or localized patches of granular urethritis.

The mode of procedure is the same in the treatment of all of these named cases of narrowing at or near the meatus. Having ascertained



by means of bulbous bougies the presence of a stricture at or near the meatus,—i.e., within one-half inch of the meatus,—the anterior urethra is irrigated by a warm bichloride of mercury solution (1 to 20,000). The glans penis is next washed with alcohol. A pledget of cotton tightly wrapped on a match-stick and dipped in a ten-per-cent. solution of cocaine is introduced one-half inch within the meatus and allowed to remain for about fifteen minutes. The stricture is then divided on the floor of the urethra to the proper calibre. The instrument used for this purpose is an ordinary blunt-pointed tenotome with convex cutting-edge.

In dividing these strictures the normal calibre of the urethra should be considered as obtained whenever the bulbous explorer, representing in size such calibre, passes the site of the stricture without catching.

The subsequent treatment consists in the passage of proper sounds daily for three days, afterwards at intervals of four to five days.

#### NOTE ON STRYCHNINE AS A CARDIAC AND RESPIRATORY STIMULANT.

BY W. H. WASHBURN, M.D., MILWAUKEE, WIS.,  
Professor of the Principles and Practice of Medicine, Wisconsin  
College of Physicians and Surgeons.

**D**URING my term of service at the Emergency Hospital this winter a case was brought in which illustrates so well the physiologic effects of strychnine that I deem it of sufficient interest to place the facts on record. At eight o'clock on the evening of December 1 I was hurriedly called to the hospital. On my arrival, a few minutes later, I found the patient, a rather large, robust-appearing man, upon the table in the operating-room, and to all appearances about to breathe his last. His eyes were upturned and the dilated pupils did not react to light; his respirations were exceedingly shallow, irregular, and scarcely perceptible; and he had the weak, uncertain, irregular pulse of a dying man. There was no history at all with the case, the patient having been brought in by the police in this condition. There appeared to me to be but one thing indicated, and that was a powerful cardiac and respiratory stimulant, though there appeared to be not the remotest probability that any good purpose would be thereby accomplished. I accordingly injected subcutaneously  $\frac{1}{10}$  grain of strychnine, and then for a few minutes practised artificial respiration. Within a very few

minutes there was a most remarkable change in the whole aspect of the case, not only in the appearance of his countenance, but in the character of his pulse and respiration. The respirations soon became so deep, regular, and vigorous that I was enabled to reach the conclusion that the man was suffering from chloroform narcosis, the odor of his breath indicating what he had swallowed. One subsequent injection of  $\frac{1}{10}$  grain of strychnine was given about an hour after the first, and at ten o'clock I had the satisfaction of being able to communicate with the patient, who, after a great deal of coaxing and threatening, was induced to confess that he had swallowed two ounces of Squibb's chloroform with suicidal intent. The bottle was afterwards picked up near the place where the patient was found by the police.

The patient was removed to the County Hospital the following day with an acute gastritis. He began vomiting about one hour after the administration of the first hypodermic injection. I believe this case is remarkable for the large amount of the drug swallowed without being followed by a fatal result, this favorable outcome of the case, however, being, as I believe, attributable solely to the antidotal effect of the strychnine.

H. C. Wood, in the eighth edition of his "Therapeutics," speaks of three cases of recovery after the ingestion of large doses of chloroform,—in one case one ounce, in the second case two ounces, and in the third case three ounces. In discussing the treatment of such cases as the above he makes no mention of strychnine, a drug whose physiologic action is such as to render it, as it appears to me, the remedy *par excellence* in this emergency. And if strychnine is thus indicated, and is as efficacious as it appears to have been in this case, where the chloroform has been taken into the body by way of the stomach, why is it not the proper remedy to use when alarming symptoms occur during surgical anæsthesia? I am able to add that in one such case, where the patient did not recover well from the chloroform anæsthesia, but appeared blanched and with an almost imperceptible pulse, rapid improvement followed upon the hypodermic injection of  $\frac{1}{10}$  grain of strychnine. Too much importance cannot, in my opinion, be attached to the administration of this drug under these circumstances, and I feel satisfied that when this is more fully realized by the profession in general, some cases, at least, of death on the operating-table from chloroform narcosis may be averted.

*CHOLECYSTENTEROSTOMY, WITH REMARKS ON INTESTINAL ANASTOMOSIS AND EXHIBITION OF A NEW APPROXIMATION BUTTON.*

READ BEFORE THE PHILADELPHIA COUNTY MEDICAL SOCIETY,  
JANUARY 24, 1894.

BY DAMASO LAINÉ, M.D.

I SHALL first briefly read the report of the following case, and then make a few remarks on intestinal anastomosis:

Mrs. L., aged forty-five, married; one child eleven years of age. In the month of October, 1892, she became suddenly ill with the following symptoms: Intense abdominal pain, paroxysmal in character, vomiting, and constipation. Jaundice appeared on the second day, as well as marked discoloration of the urine and clay-colored stools. This was followed by a severe chill on the sixth day, with a temperature ranging between  $104^{\circ}$  and  $105^{\circ}$  F. As the jaundice in this case was of the most marked type, coming on suddenly, with no previous history of emaciation, vomiting, or pain, and as the temperature and chills persisted for several days, I decided to send the woman to the Jefferson Hospital, under the care of Professor Wilson, venturing on the diagnosis of acute obstructive jaundice with Charot's hepatic fever, and in the hope that an early operation, at least of an explorative character, would be performed. She remained in the hospital about nineteen weeks, the chills and jaundice persisting, with progressive emaciation. On consultation with Drs. Keen and Brinton, as I have since learned from Professor Wilson, the question of operation came up on several occasions, but the possibility of malignancy and the woman's weak condition precluded for the time being all operative interference. Eventually her jaundice disappeared. She became apyretic and made a good recovery. She was dismissed from the hospital about the 1st of February, 1893.

Up to the time I saw her again, which was July of last year, she had remained in good health and gained several pounds in weight, but on the vomiting, jaundice, chills, and fever suddenly returning, I decided to perform cholecystostomy at once. This I was able to do, with the assistance of Drs. Stoeber and Jefferis, of Chester, and removed a large gall-stone from the distended bladder. The concretion was of unusual size and marked by large facets, indicating at least the possibility of the previous existence of other stones in the bladder or present now in the gall-ducts; but as I could detect no others with my finger through the

foramen of Winslow, I came to the conclusion that the obstruction must be due to cicatricial contraction.

We frequently read of the possibility of such an occurrence, but whether this has been clearly demonstrated to have occurred or not I am not at all certain. (Since writing the above I find that Osler mentions that this condition is extremely rare.)

The liver in this case was enlarged and the bladder enormously distended, holding, as well as I could judge, about a pint of clear, thin bile.

The fundus of the bladder was stitched to the abdominal walls by a double row of sutures previous to making the incision into its walls. A long drainage-tube was inserted and the wound closed with silk-worm gut. Whether the fever which accompanies these cases is due to a ferment (Charot's theory) or to the effects of the bacterium coli commune, or is of nervous origin due to local irritation, it certainly disappeared within a few hours after the operation. Large quantities of bile continued to be discharged through the drainage-tube, soaking the bedclothes and necessitating frequent changes in the dressings. The patient was up and out of bed on the twentieth day, and had returned to her usual occupation at the end of the month.

As the stools remained clay-colored and she suffered very much from gaseous distention of the bowels, and the daily discharge of such large quantities of bile became extremely annoying to her, I decided to close the fistulous opening. On the 15th of September I put her under ether again and made a Y-shaped incision over the region of the gall-bladder, across the old cicatrix. On entering the abdominal cavity I pushed upward the greater omentum and drew out a small knuckle of intestine, as close to the duodenum as I could judge, and performed cholecystenterostomy, using the smaller size Murphy button. The fistulous tract running through the abdominal walls I curetted and closed at once with a circular purse-string stitch. The abdominal wound was closed without drainage. The temperature remained about  $99\frac{1}{2}^{\circ}$  and  $100\frac{1}{2}^{\circ}$  F. for several days, but otherwise she made an uninterrupted recovery. On the twelfth day, after receiving an enema, the button was passed. Since that time she has been in very good health, able to attend to all her duties as a housekeeper, and has gained some fifteen pounds in weight.

One of the most noticeable things observed in connection with the gall-bladder at the time of both operations was the fact that every needle

puncture made into its walls remained patulous, the bile oozing out in large drops, showing conclusively that aspiration of this organ cannot be considered as safe an operation as we are led to believe from the advice of recent text-books. Such a procedure, judging from the above facts, should be considered unsurgical and unjustifiable under any circumstances.

It is hardly within the scope of this article to give more than an imperfect *résumé* of the work which has been done in intestinal anastomosis within the last few years. We must date the most important era in this branch of surgery from the introduction of the Lembert suture in 1825. He was the first surgeon to demonstrate conclusively that intestinal wounds unite by adhesion between the serous surfaces. Others have claimed priority, and during the last decade quite a number of sutures and mechanical means have been devised; but they all depend for their success upon the law formulated by this surgeon, that intestinal wounds must unite by primary adhesions between the serous coats.

Next comes the period of Lister, who taught us that living tissues must be kept aseptic if we expected Nature to perform successfully her reparative work.

With these facts before us, we may safely consider certain primary laws which are applicable to all cases of intestinal anastomosis, and upon the strict observance of which will in a great measure depend our success.

1. Absolute cleanliness.
2. Perfect apposition of the serous surfaces which we wish to unite.
3. Rapidity in the execution of our work.

The primary adhesive non-septic peritonitis occurring within a few hours after an operation, and which is so absolutely essential for the perfect union of all intestinal wounds, will not readily take place if infection of the peritoneal cavity occurs; therefore the strict observance of perfect asepsis is of vital importance to the success of any form of intestinal suture or mechanical device. As Nature intended the abdominal cavity to be a closed one and completely lined by a serous membrane, the ideal, in all operations, should be to leave it as far as practicable under the same conditions. As to speed, that, of course, is a matter which will always depend upon individual operators and the degree of proficiency attained by constant practice. The shortening of the time of an operation by any new instrument or suture, all things being equal, should be a strong argument in favor of its introduction. After all, we may safely assert that there is no branch of surgery

which requires such minute attention to details as this one.

It may seem presumptuous on my part to make remarks of this character before such a representative body of surgeons and specialists, but these are the facts which have most forcibly impressed me in my very limited experience in abdominal work. Most cases of post-operative peritonitis do not depend so much on the adversity of fate as on the ignorance or neglect of certain laws. Our failures and not our successes teach the most impressive lessons.

In describing the following sutures I shall freely quote from Senn, who, after all, has done more than any other man in this country towards the advancement of this particular branch of surgery. It will certainly repay the student interested in this line of work to read his article in the *Journal of the American Medical Association*. His remark that the history of intestinal sutures is "replete with stupendous ignorance, clever mechanical ingenuity, and patient experimental research" is but too clearly evident in his exhaustive review of the subject from the time of Celsus to our present day. Therefore I shall only attempt to describe those sutures and mechanical devices conceded by the profession to be of some practical value.

In applying the Lembert suture, one which it is unnecessary for me to explain, it is well to bear in mind the distances at which the stitches should be introduced, not only from each other, but from the margins of the wound. It has been advised by one of our recent text-books that this distance be one-twelfth of an inch, but we should always remember the possibility of cutting off the blood-supply by too close apposition of the stitches, and in this manner retarding the occurrence of that which we wish to take place,—adhesion and vascularization of the parts. Also, the introduction of so many stitches consumes time, without adding materially to the better union of the parts. All needles used in this kind of work should, of course, be round, and the silk of the finest.

Dupuytren's stitch is nothing more than a continuous Lembert suture. Czerny, in 1881, added an extra row to the Lembert suture, which included all the coats except the serous, as the latter includes all except the mucous. By this means he hoped to obtain perfect coaptation of the various layers of the bowel,—a firm union, followed by less cicatricial contraction. The inner suture at the same time would be extraperitoneal, ulcerating in the lumen of the bowel, and not becoming encysted, as does the Lembert. In performing circular enteror-

raphy, the mesenteric side should receive the greatest attention, since here most of the perforations take place.

The right-angle continuous suture of H. W. Cushing is one I have used very successfully in my experimental work upon dogs, when there was a tendency for the muscular and sub-mucous coat to tear. Halstead lays great stress upon the importance of including this last-mentioned layer in all sutures. Mansell's operation is so difficult to understand from a mere description, that I have thought it advisable to demonstrate the three different steps of its application by as many specimens.

Among the numerous mechanical appliances I shall only attempt to describe Murphy's button, Ramage's aluminum rings, the decalcified bone-plates of Senn, with which you are all familiar, and Robson's decalcified bone bobbin.

After a number of experiments made with different substances, Senn found that decalcified bone-plates gave the most satisfactory results. By using these he found that large serous surfaces could be held together, the bones acting as splints, and only a few stitches were required, shortening considerably the time of an operation such as gastroenterostomy, in which so much of it is consumed in suturing.

The openings in the plates are three inches in length, and that in the bowels must be made correspondingly long. This is necessary, in order to overcome as far as possible a certain amount of cicatricial contraction, which takes place, after a time, at the seat of all such operations. The degree of contraction depends upon a variety of causes, the proper correction of which has not thus far been satisfactorily solved. The consequent stenosis at the seat of operation will be in proportion to the amount of the wound left to heal by granulation, and this is a factor which Dr. Murphy claims is greatly minimized by the use of his button, which, by bringing the normal histological elements in close and accurate apposition, allows of the formation of less connective tissue, and consequently less contraction takes place.

To these plates are attached four approximation sutures, two of them armed with needles. When these have been tied, the serous surfaces from the margins of the plates are sewed together with a continued suture. Notwithstanding the large opening obtained by this combination of suture and mechanical support, in a certain number of cases complete closure has taken place. As a substitute for the plates several substances have been introduced,—catgut

rings, segmented rubber, rawhide, cartilage, chromized gelatin, plates made from turnips, potatoes, and horses' hoofs. Some surgeons who had previously advised and used various appliances in performing lateral anastomosis have now entirely discarded them, and depend upon a double row of sutures for the union of such wounds.

Robson's decalcified bone bobbin is but a slight improvement on the ancient methods of end-to-end union, in which a cylinder of cardboard or the dried trachea of a goose was introduced into the lumen of the gut and the wound united by an interrupted or continued suture.

Dr. Ramage's (of Buenos Ayres) aluminum rings operate on the principle of the Murphy button. The ends of the bowel are pressed and held together by the rings, which are operated by a groove and ratchet arrangement. Although they allow of a larger central opening than the button, sloughing must necessarily take place, and it must be slower, from the absence of the elastic pressure between the rings which is present in the Murphy button.

The Murphy button, with which some of you are already familiar, is composed of two hollow, metallic, cup-shaped hemispheres with a stem and central perforation in each one. When clamped together the stems or hollow tubes are telescoped, forming a round, smooth button. In performing an anastomosis the cut ends of the bowel are first stitched with a purse-string suture, which is tied over the stem, the edges of the bowel being tucked in the hollow, cup-shaped depression of the button. When clamped together, which must be done by a certain amount of pressure, the serous coats are brought into perfect apposition. By an extra cup-shaped ring, attached to a spring, a continuous pressure is kept up between the edges of the button. The author claims that by this means a pressure atrophy is produced, and not gangrene of the parts included in the grasp of the instrument. In the course of from eight to fourteen days sloughing takes place and the button passes through the intestinal canal without difficulty. Senn claims that he has known several cases in which the parts approximated by the button were found separated on post-mortem examination. I shall quote *verbatim* what he has to say on this subject:

"Any instrument, suture, or ligature used in effecting the continuity of a wounded or divided bowel that produces gangrene must be looked upon as a source of danger. It is impossible to effect an aseptic necrosis in the interior of the bowel, and dead tissue inhabited by pathogenic microbes always constitutes a source

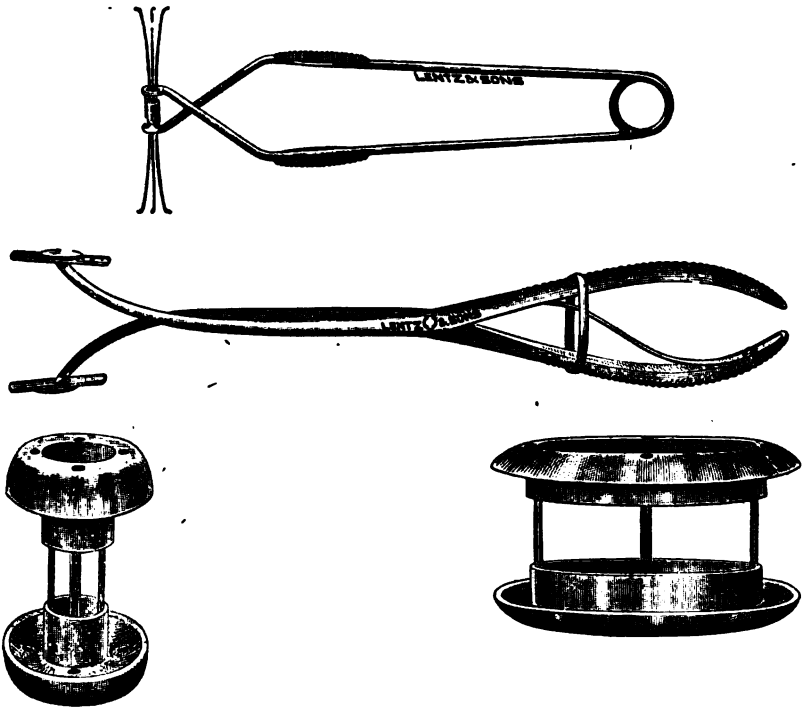
of danger. It is easy enough to produce gangrene, but we are powerless in limiting its extension in this locality. The limited area of living tissue brought in contact outside of the rings of Denan or the Murphy button will not always prove adequate in the protection of the peritoneal cavity against perforation and its immediate result, septic peritonitis. . . . The size of the button is also a very serious objection. I have operated for intestinal obstruction produced by a gall-stone less than an inch in diameter which had become impacted in the lower end of the ileum, and other surgeons will recall similar instances."

Notwithstanding all the adverse criticism made by Professor Senn and other eminent sur-

to pass, no matter what the degree of cicatricial contraction afterwards, it cannot be so great as to interfere with the ultimate object of the operation. Dr. Murphy has already reported seventeen cases of cholecystenterostomy operated on for gall-stones by means of the anastomosis button, with seventeen recoveries, as against a mortality of thirty-five per cent., or eight deaths out of twenty-three cases operated on in one sitting, all by means of suture.

In performing cholecystenterostomy by the aid of this button I shall quote the various steps of the operation as described by the author:

"The button is inserted in the following manner: An incision is made from the edge of the rib two inches to the right of and parallel



geons in this country, the usefulness of this button, or the principle on which it operates, will not be limited alone to cholecystenterostomy, where it is already conceded to be the most practical device for the rapid performance of this difficult operation, but it will also find a field in end-to-end anastomoses, gastrostomies, gastroenterostomies, and the closure of faecal fistulae. As I have already remarked, the strongest argument in favor of its introduction should be the fact that such long and tedious operations are rendered easy, quick of execution, and comparatively safe. There is no question that it finds its most useful field in the formation of biliary fistulae, either external or into the bowel, since, having only fluid contents

to the median line, extending downward three inches. The gall-bladder is drawn into the wound, also the duodenum. The duodenum is cleared of its contents by gentle pressure with the fingers. My short intestinal compression forceps are placed upon the duodenum, to prevent the escape of gas and fluids after the incision is made. A needle with fifteen inches of silk thread is inserted in the duodenum, directly opposite the mesentery and at a point near the head of the pancreas. A stitch is taken through the entire wall of the bowel one-third the length of the incision to be made. The needle is again inserted one-third the length of the incision from its outlet, in a line with the first, and brought out again, embracing the same

amount of tissue as the first. A loop three inches long is held here and the needle is inserted in a similar manner, making two stitches parallel to the first in the reverse direction, and one-eighth of an inch from it, coming out at a point near the original insertion of the needle. This forms a running thread, which, when tightened, draws the incised edge of the bowel within the cup of the button. In the gall-bladder a similar running thread is inserted. An incision is now made in the intestine, in length two-thirds of the diameter of the button used. The button (one part of it) is slipped in, the running string tightened, and the button held with the forceps. An incision of the same length is then made in the gall-bladder and between the rows of sutures. The button (the other part of it) is inserted in a similar manner and the running string tied. The forceps are removed and the button parts are held between the fingers and pressed together. A sufficient degree of pressure must be used to bring the serous surfaces of the gall-bladder and intestine firmly in contact and compress the tissues. The elastic pressure of the spring cup of the button produces a pressure atrophy of the tissues embraced within the cup and leaves an opening as large as the button, the button dropping into the bowel and being passed through the intestines."

The objections made by Senn and others to the Murphy button in gastroenterostomy and lateral anastomosis, as allowing of too small an opening in such operations, led me to devise these instead, which I bring before you to-night.

They operate on the principle of the Murphy button, but can be made of any desired shape or size. The approximating power is furnished by rubber bands. These long, oval plates would leave an opening three inches in length. Rubber bands will remain in contact with the gastric juices for several days without undergoing any material change, and will retain, so far as I have been able to determine, their elasticity.

I show you to-night samples made from ivory, walrus tusks, horn, bone, and hard rubber. If, instead of being hollow and sharp, the edges of the button be cut flat and the bone partly decalcified, they can be used on the principle of the Senn plates, as splints, without requiring sutures to keep the serous coats in contact.

I shall shortly perform a number of gastroenterostomies on dogs, using these long, oval plates, and report within six months or so the results of the operations and the amount of contraction which has taken place in each case.

MEDIA, PA., January 24, 1894.

## A NEW DRESSING FOR CIRCUMCISION.

BY F. GUNDRUM, M.D., ESCUNDIDO, CAL.

ALL those members of our profession who have performed the operation of circumcision no doubt have had an experience similar to mine,—viz., that the most troublesome and trying time for both patient and surgeon comes after the operation. From the time of the first dressing until complete cicatrization has taken place—sometimes a period of weeks—there is more or less constant suffering, at least in the majority of cases. Too well do I remember how the little patients dreaded to have their wound dressed. In rarer cases, where there was a non-adherent prepuce, and where the wound healed by first intention, things progressed more favorably. But for those surgeons who believe, as I do, in tearing down the frænum, there is always more or less pain referred to this spot. Under the common dressing it necessarily follows that there must be more or less irritation, inflammation, and pain. Not alone is this due to the wound the surgeon makes, but it arises from the tender glans surface which has been exposed and often largely denuded of its epithelial covering in peeling the adherent prepuce from it.

Even if there have been no adhesions, a few days' exposure to the air, supplemented by irritating dressings, and last, but not least, the almost constant contact of urine, soon destroy the surface epithelium, thus depriving the acutely sensitive nerve-endings of their normal covering.

After removing the skin as far back as the sulcus or cervix of the penis, I make a dorsal incision through the mucous layer of the prepuce and entirely free the head, tearing down the frænum. I now trim off the mucous layer, leaving a sufficient width to turn back like a cuff and to be stitched to the skin.

This stitching is a very important part of the operation. It should be so neatly done that all raw surfaces are coaptated. The best material for suture is fine catgut. If this is not at hand, fine aseptic silk will do. Having completed this part of the operation, the penis should be thoroughly cleansed with some aseptic solution and completely dried. Now, with a camel's-hair brush, the penis is painted from the meatus almost to the root with the following mixture:

R. Resin, ʒii;  
Copal varnish, ʒii;  
Beeswax, ʒi;  
Tallow, ʒii;  
Iodoform, ʒi. M.

Heat to about 150° to 175° F.; stir, mixing the iodoform thoroughly. Allow to cool to 115° to 120° F., when it will be ready for use. Apply one coat, and allow it to harden; then another and another, until the penis is hermetically sealed, leaving the meatus free. The dressing is completed by wrapping one or two layers of aseptic gauze round the penis and painting with the mixture. The patient should be seen in forty-eight hours. If the bandage is loose, it should be removed. Two or three fresh coatings with the mixture should be applied. Of course the penis should be properly protected by a ring of cotton. The mother is instructed to warm the mixture and apply it with the brush daily until complete cicatrization has taken place. The precaution of testing the heat of the mixture by the finger should always be taken before applying it to the child. When this dressing is used there is no inflammation, no discharge, no swelling, no pain, and no crying and screaming.

Before using this dressing, the most troublesome feature of circumcision in children was the care of the patient after the operation. Now this is all changed. After the first night the patients seldom lose sleep and they eat well. This dressing fulfils all the indications. It is aseptic-antiseptic, and completely excludes air and all germ-life. Moreover, it keeps the urine from the wound and from raw or sensitive surfaces.

#### *THE CASES SUITABLE FOR EXCISION OF THE DRUMHEAD AND OSSICLES.*

By B. ALEX. RANDALL, M.A., M.D.,

Professor of Otology in the University of Pennsylvania and the Philadelphia Polyclinic, etc.

**T**HERE is much still very unsatisfactory in the treatment of chronic ear-diseases, limiting at once the certainty, rapidity, and completeness of success, and leaving much too large a proportion of cases in which the usual methods fail of cure, at least within what the patient regards as a reasonable time. This poor showing of Otology is not nearly so common as is often supposed, for the proportion and degree of successes compare favorably with that in most fields of medical practice. But the tradition which sets down the majority of chronic ear-troubles as incurable still prevails even among aurists, and will be long in receiving its merited death-blow. Until it is corrected, this impression, that the usual otological measures are inadequate, is likely to render a considerable part of the public, medical as well as lay, impatient of according any sufficient trial

to the well-proved means of treatment, and will lead them to hail with enthusiastic hope any new claims that make a plausible showing.

Especially does this hold true for operative intervention, which is in accord with the spirit of the time and is new enough to the general knowledge to have the charm of novelty undashed by acquaintance with numerous disappointments. Hence there is much inquiry among general practitioners as to the value of such a measure as excision of the drumhead and ossicles, which has been proclaimed as "the modern treatment for suppuration, deafness, and vertigo." The younger aurists are stimulated to make premature and ill-judged experiments with the methods, to overrate their value and safety, and to scorn the conservative attitude of elder aurists as timid and fossilized. But they do so much to bring condemnation upon operative procedures by exaggerating their benefits, overstepping the proper limits in the selection of cases, and bringing occasional disaster upon their patients, that the elders are frequently confirmed in their scepticism, and feel moved to an utter denunciation of the whole field, without at all trying it themselves.

Yet there is surely a middle course, wiser from a scientific point of view, and more just to the patients who confide their present and future welfare to the aurist's care, trusting him to know and employ the best means for their relief. Prejudiced inaction and rash intervention are equally to be condemned; and it behooves us to make our best endeavor to differentiate carefully the cases to which the various methods are properly applicable, and to define, as far as we may, the true field and value of these operative procedures.

The indications for operation will always be variously read by different men. The skillful operator, accustomed to success, hesitates less to attack the doubtful cases than another, properly self-distrustful, does about operating in those in which the need is clear and urgent. He who in long series of cases generally regarded as obstinate or incurable has had fairly full success by non-operative methods looks askance at another who publishes a host of operative results, which suggests that operation alone has been tried. Much of this will continue even after we have secured more uniform and rational nomenclature, made better records, and compiled more reliable statistics of ear-diseases, although great help may be expected from reforms in these directions. Study and diagnosis must be more thorough and exact, pathological teaching must be sought from wider fields, and prognosis must be more con-

scientifically drawn from fuller knowledge of the possibilities of the case in hand.

As a contribution to this subject, it has seemed well to bring forward some observations and thoughts upon the pathological conditions with which the aurist has to deal, especially in chronic suppurative cases, and thus to endeavor to eliminate some errors and to make clearer the indications for operation.

Tympanic inflammation almost always occurs as an extension from the nares by way of the Eustachian tube; and its successful treatment generally entails the removal of the diseased conditions still lurking in the nasal and tubal mucous membrane. Inflation from this side is usually an important diagnostic and therapeutic measure, and it must not be neglected in favor of means employed through the external auditory canal. Drainage to no inconsiderable amount habitually goes on through the tube, as the effete cells of the tympanum melt down into mucus and are swept away; and free passage in this direction must be assured, if we are wholly to terminate discharge outward. This should go without saying; yet in fact it has to my knowledge been frequently overlooked in cases where excision has been advised with no study of the patulency of the Eustachian tube and similar fundamental factors of health.

In the non-suppurative cases of catarrhal deafness there is no criterion by which to clearly recognize those for which excision is advisable. Instances of impaired bone conduction are almost sure to disappoint, and these must be excluded by tests with low- as well as high-pitched forks. Gelle's tests may indicate ankylosis of the stapes and direct any intervention to it rather than to the drumhead and larger ossicles. Urgent demand for relief may be enforced by marked aural vertigo or maddening tinnitus; but this will be very rarely the result of the tympanic catarrh. Serious vertigo of tympanic origin is uncommon even in the cicatricial cases which result from destructive suppuration. So, too, as to the tinnitus; it is often unimproved by excision, not rarely caused or increased by it. In only a small group of patients, impossible to designate beforehand, will the removal of the drum-membrane and larger ossicles give any noteworthy improvement which does not sink to the vanishing-point within a year or two. Schwartz, the pioneer in this field, has operated in rare instances since 1873 without getting any success that he has cared to publish, although regarding excision as "not contra-indicated." Lucae, who had done more than

forty excisions in 1881, concluded from his fifty-three cases, with notable gain in nine, slight gain in nineteen, and loss in seven, that operation was too uncertain, and has abandoned it. Dench made a notable gain in six, and slight improvement in four of his ten very carefully selected cases; but total loss of hearing has been reported by Kessel, Schwartz, and Wuerdeman, and few operators of wide experience have escaped results little less disastrous. Tinnitus has often been wholly unrelieved; and some patients, having looked to the operation as a sure last resort, have committed suicide as soon as its failure was apparent. Excision in carefully selected instances of catarrhal deafness may be expected to aid a considerable percentage of cases, but every patient must run a decided risk of failure, perhaps disastrous.

As to tympanic suppuration, accessibility is the prime necessity to its successful treatment. The lack of this when the attic and antrum are fully involved is the cause of the obstinacy of many otorrhœas which defy, perhaps, the most thorough employment of non-operative methods and furnish a real demand for surgical intervention. A high-placed perforation is often cited as constituting a poor means of drainage or of access,—a claim justified only in the cases where there is graver meaning in the location of the opening than has always been recognized. Perforations up and back, close below the posterior fold, frequently indicate caries of the incus-shank or of the adjacent tympanic margin. In like manner, as is better known, the openings in the flaccid membrane of Shrapnell point to foci of suppuration in the circumscribed upper cavities of the tympanum, where drainage is very imperfect, the entrance of medicinal means difficult, and the bone surfaces of the Rivinian margin and the malleus-neck especially liable to ulcerate. Caries, then, is the frequent reason for the intractability of the case, as it is also the reason for the high position of the perforation; and the question of operation, beyond the mere enlargement of narrow openings, hangs largely upon the presence and curability of carious conditions.

Brought about commonly by the retention of decomposing discharges, caries can hardly be combated unless this can be fully removed and reaccumulation prevented. Decayed bony spicules must be dislodged, and the granulations, which are nature's means of effecting the cure, must be destroyed when polypoid, and stimulated to healthy growth as soon as possible. Free access must be gained, and when



the presence of the ossicles proves an insuperable obstacle to this, their removal is clearly indicated. Yet experience has shown that drainage is sometimes no better after such an operation, that the carious surfaces are not upon the malleus and incus, or not there only, and that fuller intervention in the curetting of the walls of the attic, or the removal of the whole *scute*, so as to open the attic fully into the canal, is needful to establish full access. Moreover, there are not a few cases where the major lesion is in the antrum, and no amount of intervention which does not open it freely into the canal or outward upon the mastoid surface can give rational prospect of cure.

It is no reproach to otology to acknowledge, that the differentiation of these conditions is rarely possible beforehand, and that here, as in most other fields of surgery, the operation must be exploratory. An operation within the canal will always seem less severe and sweeping than a mastoid trephining or the procedure of Stacke, with its free cutting of the soft parts; just as patients and surgeons are apt to regard any amount of groping after a foreign body within the canal or tympanum which makes no external wound as a less serious matter than turning forward the dissected-up auricle and canal and doing the needful work in plain sight and within easy reach. Yet there will be a reduced mortality as well as other great gains when the latter operation obtains its proper place in aural surgery; and it is probable that the same is true as to excision of the ossicles.

The latter operation seems too easy to those who have not often assayed it, and know it only through the descriptions of its advocates; for there are few operators but have spent an hour or more over some of their first cases, and have failed even then to remove the incus. Perfected instruments and improved technique will lessen but never remove these difficulties, but they are doing much to render the simple excision a safe exploratory step in the cases demanding intervention. In but a portion of the cases proper for its employment will it prove more than this, and the aurist who holds it out as offering more frequent cure will disappoint himself and his patient. That statistics to the disproof of this can be readily cited does not at all controvert this claim, for analysis of the reported operations shows many points in which a strong presumption lies against the asserted showing. The experience of some operators is too small for their few favorable cases to count for much in such a broad question; that of others is suspiciously large. The following of cases to learn the final result has

been generally inadequate, the estimate of success sometimes contains too peculiar a personal equation, and the conclusions drawn and urged are at times at clear variance with the recorded facts. Taking the face-value of four hundred reported operations, we find a claimed success of sixty-five per cent., a result which sinks, for Americans and foreigners alike, to near fifty per cent. when the phenomenal and really incredible success of one operator in ninety-three per cent. of his eighty-four cases is left out of the count. Nearly half of the operations in cases selected as suitable for simple excision have thus far failed,—not such a bad showing, could we accept the view that these patients really required the operation, and that the ultimate results were as stated. Yet a glance at the published reports shows that many of these cases were not only lost sight of long before the apparent cure could be accepted as assured, but were also often operated on at once without trial of the less serious measures, which might have proved equal in efficacy.

It has been sagely claimed that if the caries be limited to the ossicles, their removal must end the disease. Experience has strengthened this claim, but it is far from full establishment, since the suppuration, with its imaginary and real dangers, can persist without bone lesion. The counter-claim, that caries can frequently be healed without resort to excision, is as well established by experience. Amputation of the leg is a fairly sure cure for in-growing toe-nail or tibial caries, but the surgeon rarely deems these measures called for, at least until more local means have been tried. It has been urged that the conservative healing of tympanic caries is apparent only; that after excision is real. Time, the only touchstone on which they can be tried, has rarely given a decisive test of the rival claims; and isolated results here and there support each side of the contention. That in dealing with at least two hundred instances of Shrapnell perforation and an equal number of other cases where caries of the ossicles was or seemed to be present I have operated by excision in only fifteen, may mark me as a timid surgeon; and I am free to say that a larger number, perhaps thrice as many, should have had radical measures. Many of these patients received and rejected the advice; many more were lost sight of before it could be fairly decided on. But only one-third of the operated cases were cured, and that only tardily, none too certainly, and apparently as much by other measures as by the excision. Not a single brilliant result has been met. On the other hand, quite one-third of the non-operated

patients were discharged with apparent cure as promptly achieved and often verified by years of subsequent observation. Nor should it be left out of consideration that not a few of these latter patients had already consulted capable men, advocates of excision, and been assured, after treatment or without it, that operation alone gave them any promise of cure.

Two recent cases in point may be cited. One had a perforation up and back (Fig. 2), fringed with granulations about bare bone on the tympanic margin and filled by a polyp arising from the incus-shank. The hearing was very poor, and operation was insisted on as the sole resort, although treatment had not been tried for some time, nor by a specialist. Biting off the polyp in studying the case restored the hearing for a faint whisper; rubbing and cauterizing the carious surfaces gave apparent cure in three weeks, with a good movable cicatrix closing the perforation. Slight relapse has occurred, and cure may be only seemingly gained after three months; but it has stood the test of severe coryzas, and the hearing has remained perfect. Another patient was offered excision for her growing catarrhal deafness. I found a flaccid membrane so distended by cholesteatoma as to hide the rest of the drumhead (Fig. 4). I restored the hearing to an excellently useful point by removing the collected material, and in two months secured a covering-in of the bare surfaces on the malleus and Rivinian margin that gives promise of permanency. Both cases are too recent to prove anything as to the ultimate issue, although each has been followed longer than many of the reported cures by excision; each has another important lesson to teach. The first had long since suffered a like lesion on the right side, and for a year past has had entire healing. Through the scar up and back in this membrane (Fig. 1) the stapes can be seen to be almost wholly disconnected from the incus, which seems to have lost its articular tip. Yet this serious lesion has healed, and the hearing is perfect. In the other case the right ear (Fig. 3) presents a puckered scar of the upper back quadrant, largely adherent to the inner wall and barely revealing the stapes which it enfolds. No trace of the incus is visible; its shank at least has been lost. Healing with grave loss of hearing has been present ten or more years; but gentle manipulation with probe and pneumatic speculum has so far mobilized the stapes that a loud whisper can be heard at six feet, and ordinary conversation at ten.

Another case has been under observation

three years or more at the Polyclinic. Both ears presented suppuration in the attic, with rough, bare bone and loss in the Rivinian segment, a seemingly carious area on each malleus-neck, and a perforation high up posteriorly with a granulation-covered margin, within which rough bone was felt. On the left side (Fig. 6) healing was secured with fair promptness, which has persisted, after an early relapse, for upward of two years. On the right (Fig. 5) the caries above the short process was more obstinate, and has repeatedly relapsed after apparent cure; it has now been quiescent about a year, and its cessation is growing more assured. The posterior perforation, however, has never closed nor been dry more than four months. I have repeatedly decided to operate, and as often have been led to stay my hand because of immediate improvement. Operation is probably necessary, but I doubt if the patient will consent.

Little idea of the curability of these conditions of caries can be gained from such citation of individual cases; and as to the majority of such patients I can make no report of verification of the cure after years. Some have no recognized trouble; but I impeach subjective evidence as inadequate to prove the reality of cure. Yet that carious conditions can thoroughly heal, testimony as competent as any that can be adduced may be obtained daily in our clinical work. Patients are often seen whose suppurative disease has been so long past as to have escaped or antedated recollection; yet examination shows clearly the ravages of caries above the short process or in the stapes-region. The neck and head of the malleus are exposed or partially destroyed (Fig. 7), or, the incus-shank having been lost, the stapes is freely open to view (Fig. 8). Sometimes the history is fairly clear as to the date and duration of the affection; whether so or not, the cure is indisputably complete, sometimes with perfect preservation of function.

The proof is conclusive that these cases of suppuration with carious lesions are not rarely curable without excision; and the hearing can be perfectly preserved or restored at times if impaired. The question turns, then, upon the safety and rapidity with which the results can be obtained in general and in the individual patients. No sufficient evidence can be as yet adduced on this point. My fifteen cases with no single prompt healing may be regarded as excessively severe tests of the measure; they certainly were not easy cases where other means had not been fairly tried, as the material of other operators has none too rarely been. They

1.

2.

3.

Right drumhead, with retraction and chalk deposit; foramen above the short process and circling backward, revealing the stapes and displaced incus.

4.

Left drumhead of the same patient, showing perforation up and back, with granular margins and protruding polyp.

5.

Right drumhead, showing old complicated scar investing the stapes; foramen above the short process.

6.

Left drumhead of the same patient, nearly concealed by the distended flaccid membrane from an opening in which the epidermal contents protrude.

7.

Right drumhead, with loss of the bony margin and uncovering of the malleus above short process; a perforation up and back shows only its prominent margin.

Left drumhead of same patient, healed for two years after suppuration and caries in the Rivinian region and near the stapes.

Right drumhead, showing loss of substance, laying open the attic and antrum and showing remains of the ossicles now healed.

Left ear of the same patient, with more extensive chalk deposit, less loss above the short process, but the stapes uncovered by absence of the incus.

were fair cases for the test, as they gave no evidence of extensive lesions, such as have led me to exclude six or eight other excisions from consideration here. On the other hand, I have no hesitation in impeaching many of the claimed successes as having been obtained in patients on whom the operation was not clearly necessary, or as having been followed too short a time to justify any statement as to definite cure. It has been the reproach of the non-operative methods that relapses occur, and a year of healing may not exclude recurrence. I claim that any one aurist of good experience can, like me, match an observed and verified case of unoperated caries healed for years against every operated one so cited by the advocates of excision. This does not ignore the fact that most of the men who have operated rarely have kept track of their cases, and that Ludwig and Gruenert have followed up the long series of Schwartz's patients.

As to the rapidity of cure, it may be appropriate to note that I have several times operated on one ear when the other was similar, sometimes apparently better, except in hearing, and have obtained a cure only long after the other ear was healed. The prompt cessation of discharge in some of the operative experience of others immediately after the removal of ossicles extensively carious, makes a showing for excision in appropriate cases which no scepticism can undervalue, especially when the gain has proved permanent. Yet milder measures have given as striking cures. Much in this relation must depend upon the skill and thoroughness with which milder measures are applied. Intra-tympanic syringing must often fail in whole or part when attempted with the clumsy canulas offered and figured. Skillful employment of the probe, with full penetration into the affected regions and removal of polyp-masses, epithelial collections, and pus, is a prime requisite to the study, as well as the treatment, of the patient; and he who cannot or will not do this has no right to ascribe his shortcomings to the method. Only when this has been conscientiously but vainly done for weeks or months is excision generally justifiable; and thus employed, simple excision will often prove as inadequate as I have generally found it.

Finally, as to the safety of excision. Disaster is rare, either from the operation or the anæsthesia. General narcosis is usually needed in the suppurative cases, and its possibilities of evil cannot be wholly ignored. Schwartz expects a loss of hearing in one-twelfth of his patients, which he offsets with gain in one-half. I have never improved the hearing by

operation, and I believe its influence largely negative where proper previous treatment has been given. The cases above cited show how the function may be bettered without resort to excision, and much has probably been ascribed to it with no justification. Facial paralysis has befallen some patients; my only case was tubercular, and supervened only a fortnight after operation. It may have been due to instillation of two-per-cent. nitric acid, which has several times been followed by bad results in my experience. The stapes has at times been unintentionally dislodged or removed, with no damage as yet reported. The operation will generally prove harmless, only disappointing; but we must expect occasional disaster.

The cases suitable for excision form a small group, including very few catarrhal cases, and only some of the really obstinate suppurations. Most of the serious purulent affections demand more radical intervention, of which this may form one step.

*THE INFLUENCE OF PIPERAZIN ON THE  
URINE, AND ESPECIALLY ON URIC-  
ACID AND UREA EXCRETION.  
UNTOWARD EFFECT OF  
LARGE DOSES OF  
THE DRUG.*

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IN a previous paper on piperazin\* the results of a study of the drug on the urine in three cases of nephro-lithiasis was given. It was there remarked that though a cure resulted in two of these cases (of presumable uric-acid calculi) during the course of the piperazin treatment, no coincident noticeable influence was apparent on uric-acid excretion. The two cases cured were from their nature such as seemed insusceptible of relief by other than operative means. Striking amelioration, and subsequent cure, in the first of these cases, one of calculous hydronephrosis, had been too prompt after failure of other tried remedies to leave reasonable doubt as to cause, whatever ambiguity might exist as to the *modus operandi* of the remedy. In the second case, also, one of suppurating kidney, with frequent attacks of renal colic and hæmaturia, of seven years' duration, symptoms finally disappeared after taking piperazin steadily for three months.†

\* THERAPEUTIC GAZETTE, January, 1893.

† These cases, followed to the present, have remained cured. Case I., in which the passage of gravel was of almost daily occurrence, has passed none since. She resorts to piperazin on the occasional reappearance of slight

The third case was probably one of calcium oxalate stone, which, from its composition, had not been thought susceptible of solution by piperazin; in this case no benefit followed its administration.

In these three cases uric-acid excretion was habitually abnormally high, notably in Case II., and the daily fluctuations were often extensive. It was not apparent, however, that excretion of either uric acid or of urea, or even the degree of acidity of the urine, were markedly influenced by the piperazin in the doses administered, the average of which was a half-drachm daily, double that previously used by most observers. Notwithstanding a considerable range in the daily fluctuations of uric acid in the three cases, the average of several days' estimate of amount prior to taking piperazin and while under its influence was practically very similar. It therefore seemed curious to understand the mode of action of piperazin from the stand-point of influence upon uric-acid excretion. As I remarked in the former paper on piperazin, a uric-acid calculus may be of no very small size and yet undergo moderately prompt solution without the fact being detected by quantitative examination of the urine, the light weight of the stone not appreciably affecting the continuous daily variations in excretion. Yet, from the supposed action of piperazin, combining with and forming a soluble salt of uric acid, it was *a priori* supposed that some increase in uric-acid excretion would be apparent. The bulk of the evidence, however, at the time of the appearance of my paper, was, curiously, to the effect that piperazin, though it had, *in vitro*, a markedly disintegrating effect on uric acid, with which it forms the most soluble salt of the latter known, does not actually, in the doses ordinarily advised, increase uratic excretion, however much benefit it seems to exert on cases the nature of which are dependent upon impairment of the latter.

I have myself also obtained at least apparent good results with piperazin in certain other cases of gravel, in one other of suspected renal calculus,—the only other case of stone in the kidney that I have encountered since first using the drug,—and in a case of monarthritic subacute enlargement of the wrist-joint of supposed gouty origin. In the last a decided diminution in the joint swelling occurred under the influence of piperazin, in doses of but 15 grains daily, and pain, which pre-

viously had been severe, also promptly disappeared. In several of these cases some increase in the amount of urine under piperazin was noted. These results naturally gave me some confidence in piperazin, and I have been curious to discover its probable mode of operating, and to determine by further experiment if it is in all cases without influence on uric-acid excretion. As the cases before reported in which quantitative uric-acid examinations were made were those with kidneys the function of one or both of which would be somewhat disturbed by the presence of stone, it was important to repeat them in cases other than these, employing it both in moderate and in large doses.

In the following case piperazin was tried in moderate doses for a short time to determine its influence in stimulating inadequate kidneys. The case is one of chronic Bright's disease, in which, with the constant presence of mild uræmic symptoms, albumin remains absent from the urine. The latter, however, contains casts, and there is persistent decided diminution in the excretion of urinary solids, notably urea. Uric acid is excreted in what may be considered normal amount, though it is also presumed to be present in excess in the blood.\* In this case, besides many odd examinations, twenty-two daily consecutive examinations of specimens of the twenty-four hour urine were made for the purpose of ascertaining the actual working condition of the kidney over some time. The specific gravity, degree of acidity, amount of uric acid, urea, and chlorides excreted were carefully noted. The patient, himself an analytical chemist, was careful to live very regularly as to diet and exercise during this time. At the middle of the period of this examination piperazin was administered for six consecutive days, in doses of 5 grains four times daily.

In the twenty-two days the daily average amount of urine passed was 1085 cubic centimetres (36 fluidounces). The daily average amount of urea was 18.56 grammes; of uric acid was 0.713 gramme; of chlorides, calculated as chlorine, 4.82 grammes. The approximate daily average amount of total urinary solids was 43 grammes.

The following table, copied from my paper on non-albuminuric Bright's disease, just referred to, gives the consecutive daily amounts of urine, specific gravity, acidity, uric acid, urea, and chlorides before taking and while on piperazin:

loin pains, and always with a successful result as regards disappearance of symptoms. These pains, long prior to the appearance of symptoms of stone, were premonitory of the onset of fits of gravel.

\*A history of this case is published in the *American Journal of the Medical Sciences*, December, 1893, in a paper on a non-albuminuric form of Bright's disease.

## CASE OF W. B.

Date.	Daily average amount of urine in cubic centimetres.	Specific gravity of mixed 24-hour specimen.	Degree of acidity calculated on 100 cubic centimetres of urine.	Daily elimination of urea in grammes.	Daily elimination of uric acid in grammes.	Daily elimination of chlorine in grammes.	Approximate daily amount of fluid taken.	Remarks.
Jan. 31, 1893.....	1740	1013	7	22.70	.764	Not estimated.	Over 4 pints.	Meat diet throughout the 23 days.
Feb. 1, 1893.....	1650	1014	11	18.00	.329	Not estimated.	Over 4 pints.	
Feb. 2, 1893.....	1400	1015	18	20.00	.950	Not estimated.	Over 4 pints.	
Feb. 3, 1893.....	1390	1012	20	19.50	.780	5.60	Over 4 pints.	
Feb. 4, 1893.....	950	1021	20	19.00	.729	4.20	1 3/4 pints.	Total 2 days' urine mixed and calculated together.
Feb. 5, 1893.....	920	1020	13	18.40	.934	4.00	1 3/4 pints.	
Feb. 6, 1893.....	770	1020	24	17.75	.569	2.70	1 3/4 pints.	
Feb. 7, 1893.....	1160	1015	15	21.00	.779	3.50	2 1/4 pints.	
Feb. 8, 1893.....	1550	1016	... {	21.75	.989	6.37	2 1/4 pints.	
Feb. 9, 1893.....				21.75	.989	6.37	2 1/4 pints.	
Feb. 11, 1893.....	931	1018	15	18.00	.729	Not estimated.	2 1/4 pints.	
Feb. 12, 1893.....	1130	1020	20	23.75	.987	4.50	2 1/4 pints.	
Feb. 13, 1893.....	875	1021	20	17.50	.666	3.50	2 1/4 pints.	Total 2 days' urine mixed and calculated together.
Feb. 14, 1893.....	700	.....	40	19.00	.600	4.60	1 1/2 pints.	
Feb. 15, 1893.....	850	1021	30	15.00	.459	2.20	1 1/2 pints.	
Feb. 16, 1893.....	1025	1021	25	16.80	.725	6.45	1 1/2 pints.	
Feb. 17, 1893.....	960	1022	22	16.32	.693	3.50	1 1/2 pints.	
Feb. 18, 1893.....	1400	1021	20	19.60	.700	7.10	1 1/2 pints.	
Feb. 19, 1893.....	1025	1021	20 {	20.00	.725	5.50	1 1/2 pints.	
Feb. 20, 1893.....				20.00	.725	5.50	1 1/2 pints.	
Feb. 21, 1893.....	955	1024	25	20.00	.765	6.35	1 1/2 pints.	
Feb. 22, 1893.....	1000	1021	18	22.00	.924	5.25	1 1/2 pints.	

20 grains of piperazin taken daily from the 11th to the 17th.

During the six days in which piperazin was taken the average amount of urine passed was 1200 cubic centimetres (40 ounces); the average excretion of uric acid was .831 gramme; that of urea was 19.9 grammes; and of chlorine, 4.58 grammes. The approximate average of total urinary solids was 46 grammes (730 grains). During the six days in which piperazin was taken the average amount of urine passed was 915 cubic centimetres (30 1/2 ounces). The average excretion of uric acid was .699 gramme, and that of urea was 18.34 grammes, and chlorine 4.31 grammes. The approximate average amount of total urinary solids was 39 3/3 grammes (610 grains). It may be thus seen that actually a slight diminution occurred not only in the amount of urine, but in the most important of the urinary constituents, notably uric acid and urea. The difference is, however, too slight to be explained by any influence exerted by piperazin on the kidney. I have found that in most cases, if any effect at all is obtained from piperazin, at least a slight increase in the amount of urine passed may be expected. In this case the kidneys were probably too inadequate from disease to respond to the stimulating effect of piperazin. Though placed under the most favorable conditions,

the patient recently reports that the amount of urine habitually passed has diminished to 500 cubic centimetres, with a corresponding increase in the symptoms of chronic uræmic intoxication.

Hitherto no observations as to the effect of large doses of piperazin on the urine, such as a drachm or more daily, have been published. Whether such doses could be borne without injury and better results obtained by them, seemed a point well worth determining. It had seemed to me that only in such amounts could benefit be expected, if any was to be obtained, in cases of chronic multiple arthritic enlargement of presumable uratic origin. This is, of course, on the supposition that piperazin has some influence in promoting the solution and excretion of retained insoluble urates. In the following case the indications are that the chronic arthritis is of gouty origin and due to the deposit of urates in the joints through imperfect excretion on account of inadequate kidneys. It therefore seemed a particularly appropriate case for determining the effects of large doses of piperazin.

The patient is Mrs. J. K. M., aged fifty-two; weight, one hundred and fifty pounds. She came under observation in May, 1892, having been

kindly referred to me by Professor Keen for treatment. The joint-trouble began about a year before. The left knee then became swollen, and in the following October the right knee. She had never at any time previously had even a slight attack of rheumatism, nor had there been an outbreak of acute gout. There is no family history of gout or rheumatism. When first seen the knees were only slightly swollen, the left more especially so, and towards the inner surface. Much pain was felt in the joints, especially on movement. There was, besides, a steady, slighter pain always present. A distinct creaking was produced about the patella in extending and flexing the knees. Several of the interphalangeal joints of both hands were at times very painful. Two or three of these showed a tendency to slight nodular enlargement, and there was a nodular swelling on the dorsal surface of the left hand. There was no tendency towards spindling of the enlarged joints, when present so characteristic of rheumatoid arthritis. In addition to the pains felt on locomotion and the slight, steady pain in the knees, attacks of pain, at times quite severe, occurred. These were felt about the knees, in the nucha, and in the finger-joints, and at times were often shooting in character. These always corresponded in onset with a diminution in the excretion of uric acid, as is narrated below. The patient still menstruated, was well nourished, and though there was total gastric acidity (which still exists), she complained but little of symptoms of indigestion. When she first came under observation the stools were pipe-clay colored, but subsequently, under lavage, they gradually resumed their natural hue. The arterial tension is habitually raised, the sphygmogram always showing the elevated, rounded tidal wave of increased blood-pressure, with the chief descending wave higher than normal, the tracing of raised blood-pressure characteristic, when associated with certain other symptoms, of granular kidneys. There is no discernible arterial thickening nor cardiac hypertrophy. The first sound is, however, very distinct and the second accentuated at the apex. The last is normally placed.

While the patient was under Dr. Keen's care she had taken 15 grains of piperazin daily for seven weeks. This was before I saw her. This had been absolutely without effect upon the joint-trouble, though the amount of urine was quite markedly increased by it. The daily amount of urine prior to resorting to piperazin had averaged but 900 to 1015 cubic centimetres. Under the daily doses of 15 grains it ran between

1200 to 1800 cubic centimetres. From May, 1892, to the present I have made frequent examinations of the urine, the daily output being often measured for several consecutive months, with not infrequently consecutive daily estimations of uric acid and of urea for several weeks running. Thus a very good idea has been obtained of the usual urinary condition, uninfluenced by drugs, as well as of the effects of certain medicaments upon the kidney. The average daily amount of urine passed during the first five months, at intervals when no drugs were taken, was, as is stated above, with an average specific gravity of 1010. Recently, though the volume is subject often to wide variations, the amount, uninfluenced by drugs, tends to be somewhat excessive, and of very pale color and low gravity, resembling the urine of a case of fibroid kidney, the probable renal condition present. Urea is habitually low, averaging 18 grammes (270 grains) daily. The amount for her weight should be in the vicinity of 30 grammes, on average diet. When no acute attacks of pain about the joints occur, the average daily uric-acid excretion is 0.5 gramme. The acute joint pain is usually characterized by a diminution in excretion, the amount often falling to 0.1 gramme or below, indicating at such times impaired solubility of the quadriurates in the blood, with a tendency to their deposition, as sodium biurate, about the cartilages and synovial tissues of the joints.

In this patient two forms of piperazin were tried. My former paper on piperazin was based on the use of the Schering product only, and all remarks heretofore made concerning piperazin in the cases cited apply solely to it. Recently another preparation of basic piperazin has been put upon the market,—that of Bayer's. A sample of this was placed in my hands for trial. I used this upon the patient under consideration, administering it in very full doses,—larger than have been before tried,—to determine the effect of these upon uratic excretion, and upon the joint swelling and pain. Because of the cost of Schering's piperazin I had not then been able to try it in very large doses. Later, however, Messrs. Lehn and Fink kindly placed a supply in my hands for comparison of effects with the piperazin of Bayer. It will be seen, as narrated later, that the untoward effects resulting with the very large doses used occurred with the Bayer product, which had been employed in the two cases. These untoward effects were noticeable only to a slight extent with the piperazin of Schering, used in the one case in about the same dose.

As the accompanying table demonstrates,

## CASE OF MRS. J. K. M.

Date.	Amount in cubic centimetres.	Amount in fluid drachms.	Color.	Specific gravity.	Degree of acidity calculated on 100 cubic centimetres.	Urea in grammes.			
April 5, 1893....	660	22	Yellow.	1020	20	14.50	0.230	2.50	The amount of fluid taken lay between 2 and 3 pints daily throughout the period in which these urine examinations were made. Joint pains severe.
April 6, 1893 ...	1380	46	Light yellow.	1018	25	25.00	1.000	6.00	
April 7, 1893....	1800	60	Very pale yellow.	1010	15	18.00	0.100	6.33	
April 8, 1893....	1980	66	Very pale yellow.	1009	6	19.80	0.134	6.00	Joint pains severe; 15 grains of Bayer's piperazin taken.
April 9, 1893....	1500	50	Very pale yellow.	1012	10	18.00	0.168	4.00	Joint pains less; 25 grains of Bayer's piperazin taken.
April 10, 1893....	1800	60	Very pale yellow.	1010	11	18.00	0.181	4.75	25 grains of Bayer's piperazin taken.
April 11, 1893....	1860	62	Very pale yellow.	1008	20	18.60	0.840	4.00	25 grains of Bayer's piperazin taken.
April 12, 1893....	1860	■	Very pale yellow.	1012	20	22.12	0.500	3.00	On the 12th 70 grains of Bayer's piperazin taken; untoward effects appeared towards end of day, after third dose; piperazin then discontinued.
April 13, 1893....	1080	36	Yellow.	1014	33	14.50	0.650	3.00	
April 14, 1893....	900	30	Reddish yellow.	1016	30	18.00	0.570	2.00	
April 15, 1893....	1560	52	Pale yellow.	1011	25	18.75	0.524	2.75	
April 16, 1893....	1260	42	Reddish yellow.	1011	25	17.64	0.620	2.50	
April 17, 1893....	1140	38	Yellow.	1012	Not estimated.	16.00	0.700	2.75	
April 18, 1893....	1260	42	Yellow.	1012	Not estimated.	26.16	0.560	Not estimated.	
April 19, 1893....	960	32	Reddish yellow.	1014	22	17.30	0.520	Not estimated.	
April 21, 1893....	960	32	Reddish yellow.	1012	Not estimated.	13.44	0.410	2.00	
April 22, 1893....	1080	36	Reddish yellow.	1020	25	21.60	0.670	6.00	
April 23, 1893....	780	■	Reddish yellow.	1021	Not estimated.	18.00	Not estimated.	■	
April 24, 1893....	1680	56	Light yellow.	1011	Not estimated.	20.25	0.386	3.00	Schering's piperazin begun; 20 grains taken.
April 25, 1893....	1860	62	Light yellow.	1010	20	22.60	0.369	5.00	Schering's piperazin; 40 grains taken.
April 26, 1893....	2040	68	Very pale.	1010	15	20.40	0.249	5.00	Schering's piperazin; 1 drachm taken.
April 27, 1893....	1980	66	Very pale.	1011	20	16.00	0.268	5.50	Schering's piperazin; 70 grains taken.
April 28, 1893....	1920	64	Very pale.	1010	10	17.25	0.322	6.75	Schering's piperazin; 70 grains taken.
April 29, 1893 ...	2040	68	Very pale.	1010	■	Not estimated.	Not estimated.	Not estimated.	Schering's piperazin; 70 grains taken.
April 30, 1893....	1800	60	Very pale.	1011	10	18.00	0.210	6.00	Schering's piperazin; 70 grains taken; slight untoward effects.
May 1, 1893....	1860	62	Very pale.	1012	Not estimated.	23.23	0.300	6.00	Untoward effects disappeared; 25 grains of Schering's piperazin taken.
May 2, 1893....	1800	60	Very pale.	1012	Not estimated.	23.00	0.200	6.00	" " " " "
May 3, 1893....	1800	60	Very pale.	1012	Not estimated.	21.60	0.300	6.50	70 " " " "
May 4, 1893....	1860	62	Very pale.	1011	Not estimated.	22.00	0.400	6.00	" " " " "
May 5, 1893....	2460	82	Very pale.	1008	Not estimated.	24.60	0.160	Not estimated.	" " " " "
May 6, 1893....	1380	46	Reddish yellow.	1015	15	16.50	0.530	Not estimated.	25 " " " "
May 7, 1893....	1040	34	Reddish yellow.	1013	Not estimated.	16.64	0.070	Not estimated.	Severe joint pains; piperazin discontinued, but resumed again on May 14, in doses of 15 to 20 grains daily, and continued until June 7. No further untoward effect.
May 8, 1893....	1500	50	Reddish yellow.	1011	Not estimated.	Not estimated.	0.400	Not estimated.	
May 9, 1893....	1500	50	Reddish yellow.	1011	Not estimated.	Not estimated.	Not estimated.	Not estimated.	



both preparations of piperazin were practically without other observable effect upon the urine than that they increased the quantity of that fluid. No influence whatever was apparent upon the constituent which it had been hoped most to reach. In this case observations prior to those tabulated, as has been stated, showed an average uric-acid excretion of 0.5 gramme, which latter figure, however, was often subject to considerable variation, depending largely upon the condition of the joints, whether subject to severe pain or not. A marked increase would often follow a decided diminution or the converse, as is apparent from the table, under dates of April 5, 6, and 7, and, again, on the 10th and 11th. No steady, detectable increase occurred as a result of steady, large doses of piperazin, such as 70 grains daily. Urea excretion, and that of chlorine also, remained unaltered, as had been anticipated, for no claims have been advanced as to any effect upon another constituent of the urine than uric acid. In this case piperazin invariably exerted a marked diuretic influence. When piperazin was rebegun, on May 14, the urine promptly rose from 1080 cubic centimetres to over 2000 cubic centimetres, and this increase was well maintained while piperazin was continued, as is usual. This increase in urinary water, apart from effect upon its contained ingredients, I have found is a common result of the use of the drug, although it is not noticeable in all cases. The urine in the case under consideration, as in that of all who take piperazin, underwent decomposition very early after voiding, soon becoming of an exceedingly fetid odor. Though its degree of acidity was lessened, an alkaline action was never apparent. Joint pains diminished considerably on the piperazin treatment, but subsequently returned almost as pronouncedly as before. No noticeable effect was apparent on the joint swelling from the use of piperazin.

[Since writing the above I have again used piperazin in this case, and with better results than before. On this occasion it was prescribed in combination with potassium citrate, which alone, in similar doses, had previously had no effect upon the symptoms. It had occurred to me that the contradictory results obtained with piperazin, and the lack of marked benefit in the case just recorded, might be explained by some difference in the degree of alkalinity of the blood in those taking the drug. In the gouty, with a tendency to joint implication, as in the case of J. K. M., the alkalinity of the blood and tissues is usually diminished. As a result it would appear, on consideration, practically impossible for a soluble salt of piperazin and uric acid to be formed from the urate deposited in the joints or with that in the blood, or, if formed, for this salt to effect a passage through the blood into the urine, unless an alkali were coincidentally administered. With this idea

in mind, a half-drachm of potassium citrate was given with each dose of piperazin. On this occasion piperazin chloride, made by Bayer, and furnished me by Messrs. Schieffelin, of New York, for experimentation, was used. Doses of 15 grains of this salt were administered four times daily for four days, and then 5-grain doses four times daily for six days. The large doses at first tried were used to note if any untoward effect could be produced by them. The result, as regards toxic action, was entirely negative. As regards influence on the symptoms, joint pains, which had been severe prior to taking the combination, ceased on the second day, and remained absent, with marked diminution in size of the affected joints at the end of ten days. There was no recurrence of pain until about two months later; then exposure in a rain-storm provoked a return of pains, which were again checked by the potash and piperazin. On this occasion Schering's piperazin, in doses of 5 grains, were used, instead of the piperazin chloride of Bayer,—the supply of the latter having become exhausted. The fact that potash alone, when used on a former occasion, was without any such effect upon the joint pain and swelling, indicates, in view of the lack of marked result with piperazin alone, that some virtue exists in this combination, and that the explanation lies in the direction just indicated. Of course, it may be that the symptoms might be benefited on one occasion by the potash, and on another not, though that seems unlikely. As the paper goes to press, a second trial in this case of, first, potassium citrate alone, and, again, potassium citrate, in the same dose, in combination with piperazin, gave results identical with the above. But little improvement occurred with the potash alone in joint pain and swelling, which had returned. Decided reduction in these symptoms were once more noticeable after taking the combination.]

The effects of piperazin in this case, in the doses used,—much larger than those hitherto resorted to,—taken in connection with the result of urine examinations by myself and by other observers, in many other cases in which piperazin has been administered, show quite conclusively that the drug is practically without effect upon uric-acid excretion, at least *uric acid as uric acid*. As a result, I confess I am at a loss to understand its mode of action, and were not my clinical results in most of the few cases in which I have used piperazin, other than in the case just recorded, as favorable as those of laboratory investigation were unpromising, I should certainly, on *a priori* grounds, unhesitatingly condemn the remedy as useless. As it is, I shall still employ it discriminately, at least so long as I obtain the desired effects, and that irrespective of mode of action. As regards the latter, I shall not look for a uric acid increase by its use.

There seems little doubt as to the admirable clinical results obtained in certain cases dependent upon the uric-acid condition, accounts of which, from trustworthy observers, have appeared frequently in Germany, though its

action is so obscure. Very recently a report of some experiments of Biesenthal tend to confirm further the good opinion reached based upon clinical data. Biesenthal induced artificially the deposit of uric acid and acid urates in the joints and tissues of doves by the well-known method of Ebstein,—that of gradual destruction of the renal-secreting structure by subcutaneous injections of neutral potassium chromate. To a large number of pigeons thus experimented upon, piperazin was coincidentally administered, with the object of noting if this drug would prevent the formation of these deposits. The results obtained were most interesting. In a very large percentage of the doves which received piperazin, it is stated that none of the characteristic deposits of urates occurred, indicating that piperazin actually possesses the power which test-tube experiments attribute to it.\*

So far as I can see, since piperazin does not increase uric-acid excretion, and apparently does exert a salutary effect upon the uric-acid condition, the only mode of action possible is that such as has been attributed to certain of the alkalies, such as vegetable acid salts of potash.\* The increased alkalinity of the blood these latter produce is supposed to promote its oxidation function, increasing the formation of urea, and, perhaps, also, transforming a modicum of the uric acid by oxidation into the former, or into a second more oxidized product than uric acid, such as bodies of the alloxan or allantoin series. Though no data is at hand showing that a transformation of uric acid into urea occurs in the organism, the fact that uric acid is so closely related to the latter, each molecule containing as it does the residue of two molecules of urea, and that uric acid may be so readily made to yield urea as a product of its oxidational decomposition; and, moreover, that when uric acid is administered by the mouth to mammals, considerable of it appears in the urine as urea, tends to indicate that such a metamorphosis may occur in the human organism under favorable condi-

tions. An investigation of the action of piperazin from this stand-point may throw light upon its action, otherwise so obscure. The urea formed from a portion of the uric acid would, of course, be in such small quantity as to be practically unrecognized by quantitative tests; because of the normal daily variation, a gramme or so increase would be susceptible of a varied explanation. The detection of the presence of allantoin or alloxan in any quantity in the urine under the use of piperazin could be more easily interpreted.

*Untoward Effects of Piperazin.*—To determine if piperazin could be given in large doses without toxic effects occurring, and also to note the influence of these doses upon uric-acid excretion, I administered both the Schering and the Bayer product in the amounts cited in the table in the case of Mrs. J. K. M. A marked difference was noted in the relative toxic effects of the two, but none in the action on uric-acid excretion, both being equally inactive in this direction.

Piperazin Bayer had been taken for five days; the first day 15 grains, the second, third, and fourth day 25 grains, and the fifth day 70 grains, when toxic symptoms ensued. These appeared after the third dose of 23 grains on the day on which 70 grains were taken. A feeling of nervousness and apprehension was first noticed early in the day, but was disregarded by the patient and the remedy continued. Shortly after the third dose of 23 grains on the day on which the 70 grains were taken, intermittent, clonic spasms of the upper extremities appeared, spreading to the muscles of the abdomen and legs, but manifest to a less degree there. The patient became dazed, was unable to think clearly, and seemed for some hours partly unconscious. This condition continued for about three hours, in the latter part of the time to a less degree. Associated with it there was muscular prostration with inco-ordination. The tremors were coarse, and became more intermittent and slighter, until they totally disappeared about thirty hours after their onset. Considerable uncertainty as to gait continued for several days, and seemed rather due to impairment of co-ordination than to any parietic condition of the muscles.

Much slighter untoward effects occurred from the piperazin of Schering in the same dose, and then only after it had been taken for a much longer period. Slight tremor in the hands and arms, with malaise and nausea, occurred on the seventh day. She had then taken 20 grains on the first day, 40 on the

\* It may not be improbable that a difference in the degree of alkalinity of the blood in birds and in man will be found to account for the striking results obtained with piperazin in these experiments,—results not accruing from its use in many cases in man. As is well known, birds and serpents excrete their nitrogen, not as urea but as uric acid. The alkalinity of the blood of the herbivora is greater than in man, but I am unaware of any observations as to this point made on the blood of birds. It seems likely, however, that a similar condition must obtain with the latter, in order that the passage of uric acid through the blood and its free excretion by the kidney may be readily accomplished.

second, 60 on the third, and 70 each on the fourth, fifth, sixth, and seventh days, as indicated in the table preceding. Piperazin was then discontinued, and the toxic symptoms disappeared. On the following day (the eighth) 25 grains additional of Schering's were taken; this dose was repeated on the ninth, and then 70 grains each were taken on the tenth and eleventh days, and 25 grains on the twelfth. The supply of piperazin then became exhausted. No recurrence of toxic effects was noted after the seventh day.

More marked toxic symptoms occurred in the following case under excessive doses of the basic piperazin of Bayer:

The case is that of J. MacK., aged fifty, a case in which there is an undoubted blending of both rheumatoid and rheumatic arthritis. The joints of the fingers, toes, wrists, shoulders, ankles, and knees were affected. The patient was somewhat cachectic. There was total gastric anacidity. The bowels were constipated; the appetite poor. Urine for four days preceding taking the piperazin ran: 870 cubic centimeters, 1000 cubic centimetres, 1260 cubic centimetres, and 900 cubic centimetres; specific gravity, 1021, 1025, 1021, 1025; urea, 14 grammes, 23 grammes, 16.34 grammes, and 20.20 grammes; uric acid, 0.36 gramme, 0.537 gramme, 0.574 gramme, and 0.544 gramme. During the two days in which piperazin was taken the figures were as follows: Amount, 885 cubic centimeters and 1200 cubic centimetres; specific gravity, 1028 and 1015; urea, 30 grammes and 20 grammes; uric acid, 0.620 and 0.645 gramme. Albumin was absent. 30 grains of piperazin were given the first day, and 70 grains the second, the patient being cautioned to discontinue the remedy on the appearance of any unpleasant symptoms, such as had occurred in the preceding case. He was an ignorant fellow, a dispensary case, and failed altogether to heed my admonitions. Notwithstanding the appearance of tremors, with muscular weakness and inco-ordination, at the end of the second day, after the third dose on that day of 23 grains, he took a similar-sized dose the following morning, though the tremors and jerking of the limbs had continued through the night, and he had been delirious and sleepless. Potassium bromide was prescribed in full doses, and would probably have controlled the nervous symptoms had not the attendants, in their ignorance and through their anxiety to relieve him, administered to him 2 to 3 ounces of whiskey through the day. He was already debilitated, had been on very low diet through poverty, and was

naturally, I was told, very susceptible to alcoholic stimulants. This probably accounted for the further conduct of the case. Towards night, the jerking in the limbs continuing, he had hallucinations, and became violent and abusive. The following day tremors and prostration had largely disappeared, but his mind was completely unbalanced. He wandered about aimlessly, and was violent if restraint was attempted. He had hallucinations and delusions, and was uncontrollable to such an extent that his people asked to have him committed to the insane department of the Philadelphia Hospital. After a detention there of a few days he returned to his normal condition.

The difference in the toxic dose of these two preparations of the basic piperazin is considerable. This, it may be supposed, is due to one of two reasons: either to greater concentration of drug in the one case,—i.e., less water of crystallization, the drug, however pure, being toxic in large dose,—or to the presence in the more toxic preparation of certain bi-products occurring in manufacture, these and not piperazin producing the effects noted. If the latter is the case, these exist in greater quantity in the piperazin of Bayer than in that of Schering. It is noteworthy that the piperazin of Schering also caused toxic symptoms, but only after it had been taken a much longer time and in greater amount. These symptoms, too, when occurring, were much less in degree and in duration than the untoward effects produced by the other basic preparation of the drug. Still, they did occur, and this indicates that the same toxic principle exists in both piperazins, though not to the same extent in equal amounts of the two drugs.

It is proper to state in conclusion that, communicating with the Farbenfabriken von Bayer u. Co. as to the cause of the difference in toxic effects of similar excessive doses of the two piperazins, I was informed that it was due to their piperazin being more concentrated,—that is, containing less water of crystallization than the other piperazin.

That there may be truth in this is shown by a recent statement of Wittzack (*Munch. Med. Woch.*, 28, 1893, quoted in the *Brit. Med. Journ.*, July 29, 1893), who, in remarking that the hygroscopic property of piperazin must be borne in mind, lest disappointment attend its use, states that some samples of piperazin were found to contain as much as fifty per cent. of water. For this reason he recommends salts of piperazin, rather than the base, as the more stable.

# The Therapeutic Gazette

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## Leading Articles.

### GUAIACOL AS AN ANTIPYRETIC.

GUAIACOL has been used, as is well known, as a substitute for creosote in a large number of cases of pulmonary disease where that drug was indicated, and, so far as we know, has given so much satisfaction that it bids fair to supplant creosote in the treatment of many of these affections. Within the last few months the profession has begun to recognize the fact that it possesses other powers than those of an expectorant and antiseptic, or stimulant of the mucous membrane, and a number of prominent physicians have employed it for the reduction of high temperature.

Two of the most notable contributions which have been made upon this subject—the clinical lecture of J. M. Da Costa and the interesting paper of Robilliard—are particularly worthy of note. In both instances these clini-

cians used the drug externally upon the skin of the thigh, abdomen, or chest, either by means of rubbing or by painting it on with a camel's-hair brush. After it was applied to the skin it was thought advisable in some cases to place an impermeable dressing over it in order to prevent evaporation. As a result of the application of 20 to 50 minims of guaiacol in this manner, it has been found that the temperature of malarial fever, typhoid fever, and pneumonia rapidly falls as much as seven degrees in the course of an hour or two. Da Costa asserts that this rapid reduction of temperature is not accompanied by any marked disturbance of the nervous system or any evidences of collapse, not even by a very profuse sweat, neither does there appear to be a very active chill, although sometimes slight chilliness is experienced. The drug does not seem capable of holding the temperature down for any length of time, but it has been found perfectly safe to employ it as often in the twenty-four hours as is necessary to prevent pyrexia appearing with severity. Da Costa suggests that in many instances it may take the place of the cold bath, so far as the reduction of the fever is concerned; but whether or not guaiacol, on further use, proves to be a valuable antipyretic, we are sure that the therapeutic results obtained by the cold bath cannot be substituted by this means of treatment, since the cold bath undoubtedly exercises a therapeutic effect over and above that produced by guaiacol. We do not wish to be understood as stating that Dr. Da Costa believes that the cold bath should not be retained. He simply suggests that guaiacol be employed in its place when, because of the lack of attendants, the bath treatment cannot be well carried out, and because he believes that guaiacol is preferable to the antipyretics derived from coal-tar in the reduction of temperature. In the treatment of hectic fever of tuberculosis, J. Solis Cohen and others have found this drug of equal value. It may be painted over the chest in the area occupied by the pulmonary disease, but is said to be contraindicated in cases in which there are hemorrhages or well-developed cavities.

### A NEW TREATMENT OF MORPHINE-POISONING.

SOME of the readers of the THERAPEUTIC GAZETTE will probably remember the interesting contribution from the Laboratory of Therapeutics of the Jefferson Medical College, made by Dr. Thornton, in which he proved

that permanganate of potassium was the best chemical antidote we have for phosphorus-poisoning. Undoubtedly this influence of the permanganate is exercised through its powerful oxidizing properties, and at the time of his experiments Dr. Thornton proved to his own satisfaction that the permanganate possessed the power of oxidizing many of the vegetable alkaloids, notably morphine. Unfortunately, he did not continue his researches, and in consequence failed to report the results of his studies. In the last few weeks Dr. Moor, of New York, has demonstrated upon animals and upon himself that as much as 3 or 4 grains of the sulphate of morphine can be taken internally, provided a similar or double number of grains of permanganate of potassium are also swallowed at the same time or very shortly after. The results of these studies are of so much importance clinically, in view of the frequency of opium-poisoning, that we trust that further observations will confirm their accuracy, and it would seem that, both on theoretical and practical grounds, there is little doubt that this happy conclusion will be reached. Doubtless many studies will be made within the next few months, and clinical observations will be reported which will place this remedial measure upon a definite basis.

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*AN ADDITIONAL NOTE ON SUBCONJUNCTIVAL INJECTIONS OF CORROSIVE SUBLIMATE.*

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IN the issue of the THERAPEUTIC GAZETTE for June, 1893, we reviewed the literature concerning the treatment of various ocular diseases by means of subconjunctival injections of bichloride of mercury, and particularly the communications of Darier upon this method of therapeusis. The opinion then expressed was that this procedure should have wide and universal trial, because only by gathering together the views of unbiassed reporters, based upon large experience in widely diverse affections, could correct conclusions be reached as to its exact value.

Since the publication of this article much additional literature has accumulated, particularly the replies of numerous ophthalmic surgeons to the circular letter sent out by Valude, asking for expressions of opinion concerning the advantages, or otherwise, of this means of introducing mercury into the ocular tissues, a lengthy review of which appeared in the GAZETTE for December, 1893. Among twenty-five answers, fifteen surgeons were more or less

favorable to the use of the injections, six were opposed to their employment, and three objected to them on theoretical grounds. One surgeon gave evidence, and that unfavorable, only in regard to their efficacy against trachoma, and another, while he denied virtue to corrosive-sublimate, valued similar injections with trichloride of iodine. An instructive American communication was published in the last issue of the GAZETTE, and represented the experience with the method in the ophthalmic service of Jefferson Medical College Hospital. In this report cases of episcleritis and syphilitic and gonorrhoeal iritis were favorably impressed, cases of interstitial keratitis were either not improved or made worse, while cases of corneal ulcers were healed no more rapidly than by ordinary measures, or were aggravated by the treatment.

The theory of the treatment is evident,—namely, that a drug which is believed to be antagonistic to the morbid process shall be introduced directly into the affected organ, and thus come in contact in a concentrated form with the lesion which it is to antagonize. Whether this theory is compatible with facts it is at present impossible to decide, chiefly because we are not yet in possession of sufficient data to understand the fate of the medicinal constituent of the fluid when it comes in contact with tissues into which it is injected. That after penetration, fluids, and hence corrosive-sublimate lotion, find their way through the ocular coats, probably along the interstitial lymphatic lines, mingle with the humors of the eye, and directly bathe its cellular elements, seems undoubted; that certain drugs, thus introduced, particularly soluble salts of mercury, have a species of selective influence upon the uveal tract seems likely; but the exact relation of the physiological action of the medicament—chemical, bactericidal, or alterative—is not definitely known, on the one hand, for the reasons already quoted, and, on the other, because the feebleness of the dose renders it difficult to appreciate how action of any kind can take place.

The latter point is discussed by Lagrange (*Archives Cliniques de Bordeaux*, No. 12, 1893), who introduces some interesting calculations, which are appended. If 5 drops of 1 to 1000 solution of corrosive sublimate are injected beneath the conjunctiva, only about one-quarter of a milligramme of the drug finds entrance; but if iritis, for example, is treated with hypodermic injections of mercury or with mercurial inunctions, the doses are proportionately weak. For example, if for ten days there

is given a daily injection of 5 centigrammes of sublimate beneath the skin (a dose approaching a toxic influence, the usual one being 1 centigramme), fifty centigrammes would result during the time chosen, and these would be obliged to distribute themselves through the entire organism. That is to say, in ten days seventy kilogrammes of tissue (the average weight of the human body) will have absorbed fifty centigrammes of the liquid, and this only on the supposition that the entire amount would be present on the tenth day, when really a great proportion of it would have been eliminated. Now, fifty centigrammes distributed over seventy kilogrammes, gives less than one centigramme for each kilogramme; in exact numbers .0071. Fifty grammes of tissue have evidently received twenty times less sublimate than one kilogramme,—i.e., about three-tenths of a milligramme (in exact numbers .000355). But the eye weighs only eight grammes, and, adding the surrounding soft parts,—orbit and eyelids,—the entire weight does not amount to fifty grammes. If 5 drops of sublimate lotion (1 to 1000) are injected at one time, one-quarter of a milligramme of the drug is at once introduced into the eye and its surrounding parts, while if fifty centigrammes of sublimate lotion are given hypodermically during ten days (and more cannot be safely employed), only about one-third of a milligramme of the drug is introduced into the eye and orbit during the whole period. Lagrange regards this calculation as suggestive, and thinks it should convince those who have doubts as to the rationality of the procedure.

It is unnecessary to point out one or two evident fallacies in this endeavor to apply mathematics to therapeutic influences, particularly in the assumption as to the division and distribution of the drug; but if it is conceded that it helps to answer objections as to the smallness of the doses employed, it still leaves unanswered the remaining and probably most important point,—viz., the exact chemical relation of the medicament to that of the fluids with which it comes in contact. Certain experiments now in progress promise to give more information on this subject than that at present possessed, and when complete will receive due attention in these columns.

#### THE SURGICAL TREATMENT OF CEREBRAL TUMORS.

THE reactionary tendency noticeable of late in regard to the application of trephining and its modifications to a great variety of

cerebral affections makes any communication on the subject from Horsley, a high priest of modern brain surgery, particularly important. The subject he discusses in a late number of the *British Medical Journal* is "Surgical Intervention in Brain Tumors." Horsley does not even consider the general question as to whether operation is justified, provided brain tumor has been diagnosed and localized. This he assumes as a matter of course, and justly so, since, in spite of the long list of fatalities, it is generally conceded by all but the most conservative that operative interference is never more urgently called for than in certain cases of brain tumor. Starr, in his analysis of operations, tabulates eighty-one cases of tumors of the cerebral hemispheres treated surgically; fifty-four out of these eighty-one tumors were successfully located and removed from the brain; thirty-nine of the patients recovered and fifteen died. This, considering the fact that left to themselves death would have resulted in every instance, is sufficient justification.

Horsley states that, in the absence of localizing symptoms, operation is not to be considered. The localizing symptoms, of course, consist in attacks of Jacksonian epilepsy, or local contractions, or local auræ. As pressure becomes more marked, paralysis develops, either of motion or sensation, often somewhat sharply localized at first, but progressive in character. As corroborating symptoms, headache, vomiting, and optic neuritis are usually observed, though the presence of any or all of these last symptoms is by no means necessary for a positive diagnosis, the progressive character of the symptoms indicating the nature of the lesion more clearly than any other single feature of the case.

Given symptoms such as have been just detailed, the question as to how long medical treatment is justifiable is raised by Horsley, and is answered by the statement that six weeks is as long as can be expended in treatment by drugs unless a striking improvement in the symptoms has occurred. Starr names three months as the longest period for medical treatment, and it is allowable to postpone surgical intervention only when during this time there is no rapid increase in symptoms.

Of all the cerebral tumors, gumma and tubercle are alone amenable to medicinal treatment, at least in so far as a definite cure is concerned. It must be remembered, however, that all tumors may show a slight temporary improvement under the influence of iodide of potassium; hence the betterment of symptoms shortly following the inauguration

of specific treatment should not lead to a favorable prognosis being given too early, and particularly should not induce the practitioner to postpone surgical intervention until it is too late. Horsley personally does not believe that even truly gummatous tumors are permanently cured by drugs, though he is quite ready to concede the possibility of cure of tubercular lesions following the administration of arsenic, cod-liver oil, and other appropriate medicines.

Surgical intervention has for its object, primarily, of course, the removal and cure of the tumor. When the growth is strictly encapsulated, and when it is cortical and of moderate size, removal is readily accomplished. These conditions are almost never filled in the case of glyoma, the surgeon rarely being consulted until the growth is too widely disseminated for removal. The benign tumors, gummas and tubercular nodulations, if properly localized, may be removed with every prospect of success. Sarcomas, if taken in their early stages, while still encapsulated, offer a chance of non-recurrence.

But even though the tumor cannot be removed, and hence definite cure cannot be accomplished, operation holds out prospects of alleviation of suffering which more than justifies it. Thus trephining often serves to immediately and permanently relieve the agonizing headache and to put a stop to optic neuritis. Of course, when this process has advanced so far that atrophy has set in, the operation of trephining cannot restore sight, but if there is relief of intracranial pressure before the neuritis has reached its atrophic stage, there is often prompt subsidence of this process and consequently preservation of a satisfactory amount of vision. The vomiting is also, as a rule, immediately relieved by opening the skull, while in some cases the epileptiform attacks cease, or when paralysis has already set in there is partial or complete restoration of function. Indeed, in a few instances, malignant tumors have undergone a process of absorption after exploratory trephining.

Horsley narrates one case of cerebral tumor which could not be removed on account of its size. The tumor affected the ascending frontal gyrus of the left hemisphere. The patient lived for more than two years, with disappearance of the attacks and improvement of the hemiplegia. Post-mortem examination showed that the tumor, which at the time of operation was malignant and rapidly growing, had undergone complete destruction, in consequence of exposure at the time of operation.

As to the technique of the operation, Horsley objects to the use of the hammer and chisel for the purpose of raising a large flap consisting of the bone and soft parts adhering to it. For the removal of the bone he uses a special pattern of mechanical saw and powerful bone-forceps. In his earlier operations a large percentage died from shock. This he avoids by doing the operation in two stages. The first stage consists in exposing the skull and removing the bone. The wound is then closed and the patient allowed to recover. In a subsequent operation this skin flap is raised, the dura is opened, and the tumor attacked directly. The cavity left by the removal of the tumor he believes should be packed, since he lost a case from hemorrhage, the blood finding its way into the lateral ventricle and thence to the fourth ventricle.

Macewen for several years has performed his cerebral and cerebellar operations in two stages; this not only to lessen shock, but to allow the closure by inflammatory adhesions of the subdural space. He cites a number of cases showing the almost miraculous improvement which may follow palliative operations. In considering the subject of reimplantation of portions of skull removed during operation, he holds that, when large areas of the brain are exposed, it is well to preserve the contour of the cranium by replacing the whole slab of bone. Since, were this replaced exactly as removed, necrosis would probably take place, and since it is often difficult to drain when this large piece is put in position, Macewen drills a series of holes one-quarter of an inch in diameter, so that a mere lattice-work of bone is left. This allows of free drainage, and prompt organization takes place. Even if necrosis should occur, this is limited, and the dead portion is readily absorbed.

Cerebral localization has reached a point which apparently enables the surgeon to locate growths, especially in the motor areas, with almost absolute certainty, yet it is instructive to note that Starr's table of eighty-one cerebral tumors shows that the operation was unsuccessful in seventeen because the growth was not found by the surgeon at the point at which it was supposed to lie. Starr states that in some of these cases "the local symptoms were clearly insufficient to indicate the position of the tumor, and the cautious neurologist would not have advised an attempt to find it. In other cases the local symptoms were well marked and the diagnosis seemed clear, yet the tumor really lay at such a depth as to be inaccessible, or was so infiltrated in the brain as to make its removal impossible."

## Reports on Therapeutic Progress.

### TREATMENT OF CHRONIC ULCER OF THE STOMACH.

The great difficulty of properly treating stomach ulcers in private practice, owing to the careful dieting necessary, has led to a new mode of treatment. During the past four years DR. STEPP (*Therapeutische Monatshefte*, November, 1893) has used chloroform-water with bismuth subnitrate. The latter he does not consider necessary. He gave only the following formula:

Chloroform, 1 part;  
Aqua, 150 parts;  
Bismuth subnitrate, 3 parts.  
Sig.—1 to 2 spoonfuls hourly.

Dr. Stepp remarks that chloroform taken internally as aqua chloroformi is never an anodyne and has not the slightest pain-alleviating property. He gives the history of seven cases chosen from a very large number. As soon as the diagnosis is confirmed, the chloroform treatment can be begun. The refreshing taste of the chloroform-water combats most actively the nausea and thirst after the bleeding, and any tendency to further bleeding is stopped by the styptic properties of the chloroform. In new as well as long-standing ulcers there is soon a marked improvement; the color of the face improves vastly.

All the patients said that each time, after taking any, they felt a burning in a certain part of the stomach, doubtless the place of the ulcer, which disappeared after eight to ten days.

He never found any harmful influence upon the rest of the body.

### GALLANOL IN ECZEMA AND PSORIASIS.

In a brief article, P. CAZENEUVE and ET. ROLLET (*Lyon Médical*) call attention to the therapeutic value of gallanol in skin-disorders, particularly in eczema and psoriasis. In certain forms of subacute and chronic eczema gallanol proved to be a first-class therapeutic agent. Cases cured by it show no tendency to relapse, but the use of the drug must be conjoined with a suitable internal treatment and regulation of the diet. Under the influence of the medicament, itching and oozing disappear soon, and desiccation is rapidly established. For these cases gallanol may be employed in the form of powder, or in that of ointment

with traumaticine, in the strength of .5, 1, 2, and 3 grammes in 30 grammes. In psoriasis, especially in the mild form of the disease, the action of the new remedy is decided. The agent can be applied with advantage to the scalp, face, and neck, since its action is more rapid than that of alkaline substances. In these cases gallanol may also be employed in the form of ointment with lard or traumaticine, in the strength of 1, 2, and 3 grammes in 30 grammes. The parts must be thoroughly cleansed before the application of the medicament. The authors have similarly obtained good results from the application of a brush of this solution:

Alcohol at 93° F., 50 grammes;  
Gallanol, 10 grammes;  
Liquid ammonia, 1 gramme.

In these proportions the ammonia exercises no caustic action. In old, rebellious cases of psoriasis, gallanol seems to be less active than chrysophanic acid, pyrogallallic acid, and especially the iodo-chloride of mercury; but it has the advantage over these remedies in not being poisonous. Patients can handle the new medicament almost with impunity.

### SULPHATE OF MAGNESIUM IN THE SUMMER DIARRHŒA OF CHILDREN.

PATTERSON, in an article in the *Pittsburg Medical Review*, calls attention to the use of magnesium sulphate in summer diarrhœa, in an interesting communication. He believes the indications for treatment are to remove the cause, if known, and prophylaxis. To meet the first, sulphate of magnesium seems to him to be, theoretically at least, the ideal remedy. As to its practical utility, this report will speak conclusively. To meet the second indication, sterilize the food.

The administration of the sulphate of magnesium calls forth a profuse secretion from the intestinal glands. The remedy is a powerful alkali. It stimulates peristalsis, either directly or indirectly, through the quantity of secretion poured out or by producing a free flow of bile,—one of the natural stimulants to peristalsis.

Thus we have a remedy which, first, corrects the irritating properties of the contents of the stomach and intestines by rendering them alkaline; second, stimulates the glands to a more profuse secretion, thereby unloading a congested mucous membrane and possibly washing out the products of fermentation; third,



finally flushing the entire bowel, thereby removing the fermenting mass.

In the twenty-five selected cases treated by the author during the month of August, 1892, at the Pittsburg Free Dispensary, the symptoms were those usually found in the disease under discussion,—namely, vomiting, diarrhoea, ranging from the “chopped spinach” stools, mixed with mucus and streaked with blood, to the rice-water discharges, coated tongue, restlessness and general prostration, etc.

The ages ranged from one to six years. The dose and mode of administration of the remedy were as follows: The mother was directed to give a child a year old an even teaspoonful of sulphate of magnesium, sufficiently moistened to swallow, as soon as she arrived at home, the process to be repeated in the morning and the child to be brought back at 3 P.M. on that day.

This procedure was repeated daily at the same hours till the discharges became yellow. For the older children the dose ranged from a heaping teaspoonful to a heaping tablespoonful.

As a result of the exhibition of these doses, the mothers reported the children relieved of pain and restlessness with the induction of quiet sleep. No difficulty was experienced in the administration of the remedy because of its objectionable taste. The after-treatment consisted of general tonics and prophylactic precautions.

#### REPORT OF THE DURATION OF THE DISEASE IN THE SELECTED CASES.

	Days.
1.....	19
1.....	5
2.....	4
17.....	3
4.....	2

In the case lasting nineteen days the child suffered several relapses, owing to the mother's carelessness, and was finally sent to the hospital. The other twenty-four cases all did well and thrived under properly-regulated diet and tonics. The latter were selected according to the necessities of each case. Those most frequently used were syrup of iodide of iron, cod-liver oil, compound syrup of the hypophosphites, strychnine, quinine, pyrophosphate of iron, etc.

This list includes all of the cases that were selected for trial by this remedy, and the practically uniform beneficial results obtained in the treatment of this so often intractable disease warrant their record.

#### THE THERAPEUTIC USES OF ASAPROL.

DUJARDIN-BEAUMETZ and STACKLER (*Bull. Génér. de Thérapeutique*) have published an elaborate therapeutic study of this medicament. *Asaprol* is the sulphuric ether of betanaphthol, in the form of a calcium salt. The drug is exceedingly soluble. Its antiseptic equivalent is more or less that of the salicylate of sodium,—that is, in the proportion of 16 to 17. *Asaprol* is rapidly eliminated by the urine, in which it is detected by the addition of a few drops of the perchloride of iron, this process giving a bluish-black coloration.

The authors have administered the drug in doses of from 1 to 10 grammes (6 grammes being the medium amount employed), either in cachets of 1 gramme each, or, preferably, in solution in water, coffee, and other similar vehicles. They have used the remedy in a variety of disorders, as antithermic and analgesic: *a.* Acute and subacute polyarticular rheumatism, muscular rheumatism, muscular pains, etc. *b.* Influenza, various typhoid states, amygdalitis, pharyngitis, furunculosis. *c.* Certain cases of asthma were apparently relieved by the medicament. Similarly, as an analgesic, it was found serviceable in various neuralgic conditions, such as intercostal neuralgia, sciatica, and particularly dental neuralgia. The drug has rendered good service especially in the acute and subacute forms of polyarticular rheumatism, in muscular rheumatism, and in influenza. In doses of 6 grammes it has produced in the acute and subacute types of polyarticular rheumatism as good results as the salicylate of sodium.

A solution of *asaprol* in distilled water, intravenously injected into an animal, is more toxic than a similar solution of the salicylate of sodium; but by the stomach the former is incomparably better tolerated than the latter medicament. The salicylate of sodium often produces, even in small doses, first, vertigo, buzzing in the head, a peculiar cerebral disturbance, nausea, and vomiting; secondly, in patients suffering from albuminuria, the same amounts increase the quantity of albumin in the urine and cause nausea and vomiting. The salt, in one word, is apt to aggravate the condition of previously-diseased kidneys. The possible occurrence of these symptoms in patients suffering from renal affections constitutes, in the opinion of many physicians, the chief danger in the employment of salicylic acid. Therefore the administration of salicylate of sodium is condemned even in cases of slight albuminuria.

Asaprol is well borne: First, in doses of from 4 to 6 grammes, in the form of cachets or in solution, by patients who cannot tolerate the sodium salicylate, quinine, or antipyrin; secondly, in amounts of from 3 to 5 grammes, by dyspeptics who not only cannot tolerate any one of these medicaments, but who are unable to retain food; thirdly, asaprol never produces vertigo, buzzing in the head, cephalalgia, nor any cutaneous eruptions; fourthly, in patients who, in the course of an acute disease, suffer from a slight albuminuria, the drug, in doses of from 4 to 8 grammes, does not increase the condition, nor does it prevent its disappearance, the albuminuria passing off before the suspension of the treatment; fifthly, patients suffering from chronic nephritis, and in whom all medicine, all food, even milk, exercises a noxious effect, tolerate well the drug under study, in doses of from 3 to 4 grammes. In these cases asaprol does not increase the amount of albumin in the urine, neither does the medicament cause nausea, vomiting, or any nervous trouble. The authors, therefore, believe that neither the dyspeptic state nor renal disease, particularly those cases that rebel to the treatment by the salicylates, constitute a contraindication to the employment of asaprol in the doses mentioned.

#### THE TREATMENT OF TUBERCULOSIS WITH INJECTIONS OF SERUM OF IMMUNIZED DOGS.

In the Congress for the Study of Tuberculosis, held at Paris from the 27th of July to the 2d of August, 1893, BABES, of Bucharest (*Bull. Génér. de Thérapeutique*), treated of the above subject. Before Koch's time, Cornil, Leloir, and the author, in 1883, tried vaccination with attenuated tubercular matter of lupus against the most virulent forms of tuberculosis, but without positive results. During Koch's investigations, Grancher employed cultures of tubercle bacilli attenuated by age, and obtained remarkable results in the inoculation of a rabbit against tuberculosis. The personal experience of Babes, the results of which were announced to the Académie de Médecine in 1890,—that is, before the publication of Koch regarding the nature of his remedy,—demonstrated that tuberculosis of birds and its products render guinea-pigs less susceptible to tubercular infection. Later, Courmont, Héricourt, and Richet have confirmed and extended these results by showing that the dog, which appears to be refractory to bird tuberculosis, may be rendered refractory

to human tuberculosis by injections of cultures from bird tubercles. The researches of the author on the dog, in this respect, have not been conclusive, yet he has observed two dogs that have continued to resist the inoculation of even large quantities of cultures of human origin, after they had been subjected to the action of considerable amounts of virulent cultures from bird tuberculosis. He has employed a process of immunization, which consists in using tuberculin at the beginning, then continuing the vaccination with old and fresh cultures of both bird and human tuberculosis, and augmenting the power of resistance in the animals experimented upon by periodically inoculating them with increasing doses of cultures and their products of virulent tuberculosis. This method, however, has not been attended with success, and is often accompanied by serious complications. Of seventy-two inoculated animals, only seven were found to be immunized in the course of about one year. These unsatisfactory results are believed by the author to be due, on the one hand, to microbial associations, and, on the other hand, to the parenchymatous nephritis produced. The method, therefore, should not be resorted to in human therapeutics.

Since the serum of the dog is absolutely harmless to man, Babes has recently employed the serum of immunized dogs in the treatment of human tuberculosis. The dose administered has varied from 5 to 10 grammes of antitubercular serum to which has been added a one-per-cent. solution of phenic acid. The cases treated have been few, and as yet no positive conclusions can be drawn, but the author affirms that the tubercular patients subjected to the treatment have been benefited. He therefore recommends the employment of preventive inoculations of serum of strongly-immunized dogs in children of tubercular parents, and who are almost sure to become affected with the hereditary disease.

#### ICHTHYOL IN THE ABORTIVE TREATMENT OF ERYSIPELAS.

HALLOPEAU (*Les Nouveaux Remèdes*) details an interesting case of erysipelas, in which the most satisfactory results were obtained from the local application of ichthyol. The remedy speedily stopped the progress of the disease. The results confirm, according to the author, the great efficacy and the complete innocuousness of the treatment of erysipelas by ichthyol, and lead to the safe statement that in this drug we have a remedy that is capable of aborting

erysipelas in the course of twenty-four hours, and at any period of its evolution. Hallopeau employed a mixture in which collodion is substituted by a solution of gutta-percha and chloroform, this latter known under the name of *traumaticine*. The combination, which has a syrupy consistence, is as follows:

R Gutta-percha,  
Chloroform, of each, 25 grammes;  
Ichthyol, 50 grammes.

This is applied, not upon the diseased parts, but around these, that a barrier may be formed, so to speak, against the progress of the malady.

#### THE USE OF SALICYLATE OF SODIUM IN PLEURITIS.

DR. HERZ (*Wiener Medizinische Wochenschrift*, No. 41) replies to remarks made on an article in which he reported three cases of pleuritis successfully treated with salicylate of sodium, which article appeared in 1889.

Since that time he has treated over thirty cases in most varied stages of the disease, always with good results. There was no formation of exudation where the case came under treatment early.

#### THE ACTION OF SALICYLIC ACID ON THE WOMB.

PROFESSOR C. BINZ (*Berliner Klinische Wochenschrift*, No. 41) reviews the literature of the action of salicylic acid upon the womb, after having a case in which the use of seventy-five grains of it within a few days produced an abortion at three months.

Binz thinks the salicylic acid is not alone to be blamed in the cases reported, since its action was only bad in thirty-three per cent. of the cases, and these not the ones where the largest doses were given.

He concludes that at present we may gather:

1. That salicylate of sodium is worth trying for painful, late, and insufficient menstruation.
2. If for rheumatism, etc., it seems to be indicated, it must be given with caution if a tendency to miscarriage or premature birth exists, or where one is not sure of the contrary. The same holds also of the tendency of the non-pregnant womb to bleeding.

Binz hopes such a useful remedy will not be abandoned, but that it will continue to be cautiously used during pregnancy, and that further experiments will give us more exact proof of its action.

#### ATROPINE FOR CHRONIC MORPHINE- POISONING.

PROFESSOR W. KOCH (*Therapeutische Monatshefte*, November, 1893) reports a severe case of chronic morphine-poisoning which he treated successfully with atropine. The patient was a lady of thirty-eight years of age, who had used morphine injections for fifteen years. When she came under Dr. Koch's care she had, after leaving an institution, obtained large quantities of morphine on the journey home. Her eyes were glued shut with severe conjunctivitis. There was a considerable collection of mucus in the bronchi, which was not expectorated. The rattling sounds were constantly audible all over the room. The skin was moist, covered with viscid sweat; there was severe stomachache, vomiting, severe diarrhoea, constant unrest. The patient lay on her back in bed; there were twitching movements of the legs. She was without the least interest in her relatives, simply demanding more morphine and strong hypnotics; 45 to 60 grains of chloral were given internally or in an enema. When using 7 grains of morphine in twenty-four hours, marked signs of deprivation of morphine appeared. The strength diminished more rapidly, all bad symptoms increased, specially the collection of mucus in the bronchi.

This condition induced Professor Koch to try small quantities of atropine. Of compressed tablets, containing  $\frac{1}{8}$  grain morphine and  $\frac{1}{16}$  grain atropine, he gave two during the first four days. These produced a marked improvement in the general condition; the bronchial catarrh and diarrhoea were specially improved. In the first four days  $10\frac{1}{2}$  grains morphine was the minimum; after eight days only  $4\frac{1}{2}$  grains were necessary. From the fifth to the eighth day only one morphine-atropine tablet was injected, and at the end of ten days  $\frac{3}{4}$  grain sufficed. The patient had grown heavier, could walk, and the lameness had, by the use of electricity, nearly gone. But when the morphine was still further lessened, the insupportable hunger for it produced a very depressed state, so he was obliged to give another tablet. He was finally, after two months, able to get her into fairly good condition and using only  $\frac{3}{4}$  grain of morphine daily. When sent home she soon relapsed again and returned, so that he used the morphine-atropine tablets five times, each time with the same result.

He concludes that,—

1. Atropine removed in a surprisingly short time the severe exudation of the air-passages, the bowels, and the skin.

2. The atropine moderated very much, as it seemed, the symptoms due to the abstinence from morphine and hastened the possibility of gradually withholding it.

**THE ABSORPTION OF SALICYLIC ACID  
THROUGH THE SKIN AND THE  
TREATMENT OF ACUTE  
RHEUMATISM OF  
THE JOINTS.**

PROFESSOR DR. BOURGET (*Therapeutische Monatshefte*, November, 1893) gives a review of the efforts to prove how much of any substance is absorbed through the skin. He gives brief histories, with temperature charts, of nineteen cases of acute rheumatism which were treated only externally. The diseased joint was anointed with ten-per-cent. salicylic salve and bound with flannel. The result proves that no internal dose is necessary; but having thus proved this, Bourget says he will use in future small doses of a salicylate preparation, preferably salacetol, in daily doses of from 15 to 30 grains. The pain is quieted with great rapidity by the external treatment. The swelling also diminishes rapidly and the fever falls gradually. He thinks the internal dose will prevent a slight relapse, which frequently occurred on the fourth, sixth, or even the eighth day. Complications were very rare; in the nineteen cases only twice did a slight pericarditis occur. In one instance it was accompanied by a slight effusion, which was quickly absorbed; there was no effusion in the other.

In conclusion, he finds that,—

1. Salicylic acid is quickly and intensely absorbed through the skin. The skin of young persons is much more capable of absorption than that of older ones, and the skin of blondes is more readily penetrated than that of individuals with black hair or dark skin.

2. The rapidity and strength of this skin absorption depend upon the vehicle with which the salicylic acid is used. Only when fatty substances are used can the skin absorb it readily; when vaseline or glycerin is used, the absorption either does not take place or is very slight.

3. The treatment of acute joint rheumatism with a salve prepared from salicylic acid and turpentine is very much to be commended.

4. This salve is less efficient in other forms of rheumatism, but may serve as an aid to massage in treating them.

5. In cases of gonorrhœal rheumatism it has no effect.

**THE ACTIONS OF APOCODEINE.**

From an elaborate experimental study of the physiological actions of apocodeine, L. GUINARD (*Lyon Médical*) draws the following interesting general conclusions:

1. Apocodeine, contrary to what is generally held, is not an emetic.\* When the drug produces nausea, it is probably due to impurities and to its containing small amounts of apomorphine.

2. When .002, .010, or .048 gramme of apocodeine hydrochloride per kilogramme of the body-weight are intravenously injected into a dog, there is immediately produced a great nervous excitement, followed by violent convulsions, in the midst of which there are perceived symptoms of cerebral depression. During this convulsant period there occur acceleration of the heart's action and of the respiration and an elevation of the bodily temperature. This action of the drug may also be observed secondarily, after subcutaneous injections of from .05 to .06 gramme per kilogramme of the body-weight.

3. When apocodeine is administered hypodermically, in the proportion of .025 to .035 gramme per kilogramme of the body-weight, it only produces a calming effect on the dog. It causes a slight, quiet sleep, without provoking emesis or primary excitement. This phenomenon resembles the physiological sleep; the animal assumes a normal attitude, and, on being approached, awakes without evincing unusual disturbances, and, on the whole, does not show the peculiar hyperexcitability characteristic of animals under the influence of morphine. The same effects are produced by intravenous injections of apocodeine, but in these instances the drug should be introduced in dilute solutions and very slowly.

4. The disappearance of the soporific effects takes place in a simple manner; the animal awakes, but does not show the symptoms of hebetude and general malaise following the action of morphine. Four or five hours afterwards no trace of the medication is observed. The action of the drug is generally fugacious.

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\* After the publication of this study had begun, Fröhner, of Berlin, published a paper, in which he declares, like the author, that apocodeine is not an emetic, nor does it produce nausea. The same Fröhner, without having made any analysis, pointed out the expectorant and narcotic properties of the drug, produced upon the dog, in hypodermic doses of .25 gramme. He does not describe the character of the sleep produced by apocodeine, and only and simply compares it with the narcosis caused by morphine.—*Monatsh. f. Praktische*, No. 6, vol. iv., 1893.

Apocodeine is rapidly eliminated, especially by the kidneys.

5. Following the administration of a calming dose of apocodeine, there almost always occurs a short period of cardiac and respiratory acceleration, accompanied by a slight elevation of the arterial pressure. On the other hand, during the period of sleep produced by the drug, both the heart and the respiration are slowed, and the arterial pressure is maintained at a little below the normal height. The slowing of the heart is not accompanied by disturbances in its rhythm, there being no intermittences. The action of apocodeine upon the heart is of medullary origin, as shown by previous section of the vagi. The diminution of the blood-pressure appears to be due more to the slow action of the heart than to an active vaso-dilatation.

6. During the somniferous action of apocodeine there is a reduction of the temperature varying from  $1.8^{\circ}$  to  $2^{\circ}$  F. This phenomenon is probably due, 1, to the immobility of the animal and to muscular relaxation; 2, to the modifying influences exercised on the heart and the respiration, and on the interchange of gases.

7. Under the influence of apocodeine there is produced a diminution of the intrapulmonary and intraorganic interchange of gases, manifested, 1, in a decrease of carbon dioxide and an increase of oxygen in the expired air; 2, in an increase of both the oxygen and carbon dioxide in the blood. This phenomenon is analogous to the one observed by Arloing during the hypnotic action of chloral, and to that noticed by the author in his studies of morphine, showing that there appears to be a distinctive peculiarity between an hypnotic action and an anæsthetic action.

8. Apocodeine, in all doses, produces always a hypersecretion of saliva, of bile, of the pancreatic and intestinal juices, and of that of the majority of mucous glands. These hypersecretory effects are the result of a central action and not of a special influence exercised by the medicament upon the peripheral elements, particularly the glandular ones. The experiments performed on this part of the subject support conclusively the statement just made.

9. Intestinal peristalsis is considerably increased by apocodeine, such functional change being due to an exciting influence exercised by the drug upon the ganglionar sympathetic centres.

10. The changes produced by apocodeine originate in the primary actions exerted upon the nervous system. They first show them-

selves upon the brain, but they are afterwards extended to other parts of the organism. These actions are depressant when the dose ingested is moderate; depressant and afterwards convulsant when the dose has been large but slowly administered; and, finally, convulsant from the onset when the dose is so introduced as to be rapidly absorbed by the organism.

11. The depressant effects upon the medulla spinalis, as shown by the posture assumed by dogs under the influence of apocodeine, are secondary; they are slowly produced and very moderate in those animals that have been deprived of the brain or in which previous section of the medulla has been practised. This last remarkable fact only shows the dominant action of cerebral centres upon the lower ones and their susceptibility to the action of drugs. The primary depressant effect upon the brain is communicated to the medulla oblongata and to the cord, and determines a functional inertia of these inferior centres which, without the influence of the brain, resist for a long time the direct action of the drug in question.

12. As depressant effects upon the cord may be produced independently of a cerebral action, the convulsant effects of apocodeine and the accompanying disturbances are similarly the result of a direct action upon the cord.

13. The convulsant action of the drug is followed by sensory and motor paralysis of the whole nervous system, these phenomena being best observed in frogs.

14. The previous administration of apocodeine, as in the case of morphine, favors the consecutive action of an anæsthetic.

15. During the sleep produced by apocodeine, the pupil is but little changed; it is dilated during the convulsive period, especially when the dose is poisonous. This dilatation attains its maximum in dogs, and especially in cats.

16. Cats show the same resistance to the depressant cerebral action of apocodeine as they do to the somniferous action of morphine. To these animals the drug under consideration is always excitant, enormously increasing the secretions and producing death by tetanus.

17. Comparing the effects produced by apocodeine with those caused by codeine, there will be found well-marked analogies, especially in regard to the ability of both drugs in producing sleep and in exercising a convulsant action. But a close examination of the subject will also show that there exist between the two medicaments notable differences in their actions. Codeine is less powerful as a hypersecretory and calming agent, but a more active

convulsant and more dangerous, therefore, than apocodeine. This last substance, although less powerful than codeine, is, on the other hand, more constant in its effects.

On the whole, the author, judging from the results obtained in his elaborate research, does not hesitate to recommend the *substitution of apocodeine for codeine in all those cases in which the former medicament is indicated and employed.*

#### EXPERIMENTS AND CLINICAL OBSERVATIONS ON THE ACTION OF CHLOROFORM.

In the *Lancet* is given an interesting account of a study upon the effects of chloroform.

The results of fifty experiments performed on animals at the Veterinary College of Glasgow is believed to prove that when chloroform is inhaled there is an action exerted by the vapor on the respiratory tract, and that a reaction ensues when the inhalation is discontinued, while it is maintained that both experiment and clinical observation combine to show that this reaction is the cause of primary syncope when allowed to take place at certain stages of the inhalation. A most important question, therefore, is, How long does the vapor take to escape from the lungs when the inhalation is discontinued? Dr. Snow concluded from the odor of the breath and from an observation on a man who inhaled the smoke of a cigar, that the vapor was completely discharged from the lungs with three expirations, and Kirk's observations on patients and on a rabbit, cat, and dog confirm this and seem to show that the lungs must be emptied in from ten to twenty seconds. The time taken to charge the lungs may be passed over, as well as the probable effects which are produced by the action of the vapor, for the reaction which follows is the most important question to be considered, and constitutes in itself an irrefragable proof of the action that had taken place previously. It must here be mentioned that rabbits, cats, and small dogs were chloroformed in a large glass vessel with a close-fitting lid, of a capacity of four thousand five hundred cubic inches, and which had been previously charged with a given percentage of vapor. When observations were made on the heart, the action was previously determined by auscultation, a binaural stethoscope being used in all but a few early experiments. An experiment on a rabbit and another on a guinea-pig seemed to show that no reaction of any importance with respect to the heart's action occurred in these animals. No observations on the pupils were made in these cases, but it may

be claimed for those which were made on the pupils of the cat that they led to results of the most beautiful and decisive character. When a cat's pupil is dilated it is circular, as it contracts it becomes oval, and it finally, in the strongest contraction, appears as a mere line. The yellow iris so common in cats renders pupillary changes easy of observation. In one experiment a cat inhaled four per cent. of chloroform for two minutes. When taken out of the jar the pupil was widely dilated, and it contracted to a minimum in fifteen seconds; this lasted for forty-five seconds, when there was sudden and wide dilatation and the cat recovered. In two other experiments the contraction took place in ten seconds and the sudden dilatation occurred a minute afterwards. Similar results ensued in two cats that breathed four per cent. of chloroform for one minute. This contraction cannot depend on further absorption, for so long as the cat remains in the vapor the pupil remains dilated; and it is equally clear that it must be due to a sudden reaction, otherwise the pupil would gradually return to its normal condition. In deeper anaesthesia these results were considerably modified, but they may be meanwhile omitted.

It now remains to show that the vapor reaction leads to stoppage and great irregularities in the action of the heart in cats. A considerable number of experiments were performed to determine this, but it will only be necessary to instance a few. In four experiments four cats inhaled four per cent. of chloroform for one minute. In one instance the observation was a failure, owing to the resistance of the animal, and in another the cardiac rate, which had been 140 before the inhalation, was extremely rapid when the cat was taken out of the jar; but there was a sudden stoppage in half a minute, which lasted for about five seconds, and this was followed by extreme irregularity for a minute and a half, when the cat recovered. There were pauses between individual beats in this case, sometimes after every third beat, while the sounds were very weak during this irregular action, and the same may be said of other cases. In the other two experiments the results were similar, rapid but regular action of the heart, ending in sudden stoppage and irregularities in about half a minute. In two other experiments, in which two cats inhaled the same percentage for two minutes, there was not much difference in the results. In eight experiments the several cats breathed three and a half per cent. of chloroform for two minutes, and subsequent stoppage and irregularities occurred in five of these. In one the heart was

irregular when the animal was taken out of the jar, but stoppage did not occur till some time afterwards. In another the cardiac rate, which had been regular and quick when the animal was taken out of the jar, became extremely irregular with frequent stoppages in half a minute, and this condition lasted for no less than four minutes and was associated with convulsive movements of the muscles of the thorax, the irregularities of the heart being more marked when the latter occurred. This is important to notice, as the concurrence of these two phenomena, though rare in cats, is common in dogs, and probably also in the human subject. Two days after the eight preceding experiments were made, the five cats that had shown irregular action of the heart being caused to inhale the same percentage of chloroform (three and a half per cent.) for a longer time,—for four, five, six, seven, and eight minutes respectively,—more or less irregular cardiac action occurred during recovery in all, and in two it was marked and prolonged; but it was observed that the irregularities were longer in manifesting themselves. In one, for instance, the cardiac rate had been 180 before inhalation and very regular, but after inhalation of chloroform for five minutes it was found to be 140 and regular; it suddenly rose about the beginning of the second minute after the administration was suspended to over 200; at the end of the second minute irregularities began, with changes in the “lubdupp” difficult to describe, and continued for eight minutes; and it was ten minutes from the commencement before the cat recovered. In the next case, in which another cat remained in the same percentage for six minutes, slight irregularities occurred in two minutes after cessation of the inhalation, but the cardiac action became regular in three minutes after removal from the vapor, and the animal recovered completely in less than five minutes altogether. In the last of the five experiments, in which a cat inhaled three and a half per cent. of chloroform for eight minutes, the cardiac rate was distinct and fast (240) for four minutes after, but it then suddenly became slow and irregular, and this continued for two minutes, when the cat recovered and the heart was found to be quite regular (160).

These results showed that very deep anaesthesia in the cat did not always modify reactionary effects on the heart, but the fact that the stoppages were longer in occurring after deep anaesthesia proved that the latter were not due to absorption of the chloroform, and that they could only be accounted for by the vapor reaction. The cardiac rate was often 240

during the reaction and the irregularities were coincident with a very sudden slowing. The binaural stethoscope permitted auscultation with very little pressure on the chest-wall. In a few experiments (with a long stethoscope) the cardiac action and the state of the pupils were observed at the same time, and it was found that contraction of the pupils was coincident with rapid action of the heart, and that dilatation corresponded with slowing and irregularity. It will have been observed that when the irregular heart's action was of short duration, the cat recovered in less time than it had been exposed to the vapor of chloroform, but that if the irregularity lasted longer, it was quite otherwise,—facts which are of great importance. The irregular action commences when the last drop of chloroform has left the blood, but as long as it continues the animal is as passive as if under the influence of a profound dose of the agent.

Forty experiments having been thus far performed in the inquiry, there remained only ten to be done on dogs. A very pronounced struggling stage takes place in the latter, this being almost entirely absent in cats. When this was at its worst, auscultation was found to be impossible, and it was often aggravated after the administration of the chloroform had ceased; but the observations which were made when the struggling had somewhat subsided, or even after it had passed off, were sufficiently conclusive. These showed that the dog was liable to similar stoppages of the heart as the cat, and that they were almost invariably associated with spasms of the respiratory and other muscles. They further showed that deep anaesthesia modified or altogether prevented these effects on the heart, and this is a vital part of the inquiry. It was found, moreover, that immediately after the struggling stage, and when the animal was quiescent, the anaesthesia was, nevertheless, not deep enough to prevent irregular cardiac action. In an experiment which was made on a male terrier, about two stone in weight, the animal inhaled two drachms of chloroform from a warm, dry towel for one minute. For the first minute during recovery the action of the heart was very rapid, but owing to some struggling it could not be counted. The struggling then became so violent that the dog was released, and it rolled on the floor for two minutes, moving its legs with great rapidity. On becoming comparatively quiet, the heart's action was found to be feeble and very irregular, there being frequently pauses between every beat, while the beats were very weak. In another experiment on the same animal, which was made six days afterwards, the dog inhaled four per cent

chloroform in the jar till complete anæsthesia was induced. Previously to this the action of the heart had been slightly irregular, the rate being from 116 to 120. All movements ceased in two minutes, and the dog was removed from exposure to the chloroform after one minute more, when it was found to be quite motionless and relaxed. The action of the heart was found to be regular and slow (88) for half a minute, but it rose regularly during the next half-minute, and during the second minute it was 140, regular, full, and strong, when the dog recovered. In another experiment, a small dog, fourteen pounds in weight, breathed four per cent. of chloroform till twenty-five seconds after the struggling had ceased, being quite flaccid when removed from the jar. Nevertheless, the heart's action, which had been regular when the dog was removed, soon became extremely irregular, and then rose to 240, subsequently slowing to 140, with marked irregularities lasting for fully a minute. When, some days afterwards, the same animal was kept in the vapor for one minute after it had become flaccid, there was no irregular action of the heart during recovery. Four more experiments with other dogs gave similar results.

It is maintained that the stoppages and irregularities of the heart, as above described in experiments on cats and dogs, correspond with and explain the fall of blood-pressure to zero which has been observed by some experimenters after the administration of the chloroform has been discontinued, and also the syncope of sudden failure of the pulse which has been so often noted clinically in the human subject. According to this view, chloroform syncope is analogous to syncope from other causes. The sudden removal of pressure from a large blood-vessel—i.e., the cessation of a force previously acting—may cause syncope. When men have been subjected to a pressure of several atmospheres they cannot be brought back suddenly to the normal atmospheric pressure without incurring the danger of syncope, and this syncope may prove fatal. Further, it has been seen that chloroform syncope coincides with a sudden transition from a quick to a slow cardiac rate, and the same has been observed in some other forms of syncope. Some clinical observations that have been made at the Western Infirmary, Glasgow, with a binaural stethoscope, may be briefly noticed. In one case the heart's action rose from 100 to 152 in half a minute, and in another it rose from 84 to 132 during the first minute, and to 152 before the expiration of one minute and a half, and similar results were seen in other cases. In all in-

stances the cardiac rate returned to normal just as the patient was pronounced "over," and only one case occurred which tended to prove that the quickened cardiac rate, instead of gradually slowing, may suddenly drop to a slow action, just as we have seen it do in dogs and cats. In this case the cardiac rate rose in two minutes to 132, and so continued for the next minute, but during the fourth minute there was an instantaneous fall to 96, although the action continued to be tolerably regular. It is probable the chloroformist allowed a vapor reaction to occur by not renewing the dose of chloroform soon enough. What were the consequences? The patient began to talk loudly and to struggle violently, and within a minute his breathing gave cause for anxiety. If it be objected that the reaction did not give rise to syncope in this case, the answer is that it was less in degree than it might have been, and there can be no doubt that these milder instances occur frequently. The coincidence with experimental results to be remarked is the instantaneous transition from the quick to the slow cardiac action, and this has been found to be associated in other cases in the human subject with irregular action and actual syncope. Deep anæsthesia in dogs and the human subject prevents this untoward result, but space forbids the discussion of the question why this should be so. The chloroformization ought to go on to deep anæsthesia in spite of coughing, struggling, or apnoeal pauses of even a whole minute's duration. The use of the binaural stethoscope would be of great value in our infirmaries, and might be expected to throw light on disputed questions.

#### AMMONIUM CHLORIDE AS A REMEDY IN CYSTITIS.

DR. GEORGE CORRIE has published in the *Virginia Medical Monthly* his views concerning chloride of ammonium in catarrhal states.

Directing his attention somewhat particularly to the diseases of the pelvic organs, the writer has had the opportunity to make trial of numerous vaunted agents, old and new, for the relief of cystitis, and finding the simple chloride of ammonium so much superior to all others, calls the attention of the profession thereto.

Some of the conditions mentioned demand operative or other measures for radical cure, but the above-named drug will be found of material service in preparing cases for operation, in palliating cases unsuited for operation, and as an adjuvant where other treatment constitutes the main feature.



A No. 1 capsuleful of Squibb's pulverized purified ammonium chloride should be taken three or four times in the twenty-four hours, preferably when the stomach is somewhat empty, each dose to be followed immediately by a half goblet or a goblet of pure cold water.

The following are some of the conditions in which the drug has been given faithful trial, with most satisfactory results in *every instance* :

Cystitis dependent upon stone in the bladder, stricture, hypertrophy of the prostate, deposits of urates, etc., gonorrhœa (male and female).

Cystic irritation from uterine disease or menstrual disorders, malarial effects, masturbation, early pregnancy, simple urethritis (traumatic) in newly-married women.

Cystic and renal sequelæ of *la grippe*.

In the majority of cases it was surprising to note the rapidity with which the urine was cleared of bladder mucus, blood-corpuscles, pus-corpuscles, urates, phosphates, etc., the distressing symptoms disappearing therewith, and in no case did the salt occasion any gastric or other disturbance when taken as ordered.

No explanation of the *modus operandi* of the remedy is offered. Only practical experience is here given, with the sincere hope of aiding those whose opportunities have been limited in the treatment of the diseases of the genito-urinary organs.

Fill the capsules only as needed for administration, as the salt dissolves the gelatin in a short time.

**PRACTICAL OBSERVATIONS ON THE FORMULAS AND ACTION OF CERTAIN DIURETICS AND PURGATIVES IN THE TREATMENT OF SOME FORMS OF DROPSY, RESULTING FROM VARIOUS CAUSES, AS CARDIAC AND RENAL DISEASES.**

In the *Virginia Medical Monthly*, DR. JOSEPH JONES contributes a paper on this subject.

The successful treatment of dropsy must be based upon a knowledge of its various causes and effects and upon the action of the various remedies employed.

Derangements of the due relationship of secretion to absorption in the tissues and cavities of the body may depend upon,—

1. Derangements in the nutrition of the tissues, leading either to the increase of secretion or diminution of absorption.

2. Derangements or alterations of the blood, leading to derangements of the nutrition of the tissues, with an increase of secretion or diminution of absorption.

3. Derangements of the circulatory apparatus attended with venous obstruction and congestion, increased serous effusion from the distended blood-vessels, and diminished absorption.

4. Derangements of the functions of those organs which regulate the amount of the blood, as well as its constitution, by regulating the amount of the watery element by the elimination of excrementitious materials.

A. Dropsy arising from the prolonged action of the malarial poison, characterized by destruction and diminution of the colored blood-corpuscles, splenic enlargements, and hepatic derangements.

Chronic hepatitis, parenchymatous hepatitis, portal obstruction, anæmia, and general anasarca are frequent results of the prolonged action of the malarial poison in the valley of the Mississippi.

The remedies best adapted to relieve the distressing and dangerous conditions induced by the prolonged action of the malarial poison may thus be enumerated :

(a) Sulphate of quinine, bromide of quinine, valerianate and hydrochlorate of quinine.

(b) Arsenic (arsenous acid, Fowler's solution).

(c) Iron (the various preparations of iron,—sesquichloride, citrate of iron and quinine, tribasic phosphate of iron, etc.).

(d) Mercurials in occasional doses to relieve hepatic congestions and derangements, as blue mass, calomel, bicarbonate of sodium and calomel.

(e) Saline purgatives, as bitartrate of potassium, Rochelle salt, sulphate of sodium, and sulphate of magnesium.

(f) Diuretics, as juniper-berry tea, nitric ether, jaborandi, pilocarpine, digitalis, etc.

The results are doubtful in those cases in which the liver has been structurally altered by the prolonged action of the malarial poison.

B. Dropsy resulting from valvular disease of the heart, mitral and tricuspid obstructions.

Valvular disease of the heart is attended with more or less hepatic obstruction, and benefit is often experienced by the judicious use of mercurials. Purgatives and diuretics are essential.

The agents used in the treatment of cardiac dropsy may be considered in connection with the following class :

C. Dropsy resulting from various structural alterations of the kidneys, included generally under the head of Bright's disease, acute and chronic nephritis, parenchymatous and inter-

stifial nephritis, gouty and cirrhotic kidney, etc.

In this class of dropsy (C), as with that indicated by B, all portions of the cellular tissue, as well as the abdominal and pleural cavities, may be enormously distended with serous effusions, and the skill of the physician is often taxed to the uttermost to relieve the great embarrassment of the circulation and respiration.

The lesion of the kidneys attended with albuminuria may result from the cardiac lesion, and the latter may also result primarily from the former. In many cases great and immediate benefit may be derived from various purgatives and diuretics.

The following formula may be used in many cases of dropsy arising from cardiac and renal lesions:

R Bitartrate of potassium,  $\mathfrak{z}$ xvi.

Divide into 16 packages. Add 1 pint of boiling water to 1 package (1 ounce) of bitartrate of potassium and 1 ounce of juniper-berries. Place the juniper-berries (1 ounce) and the bitartrate of potassium (cream of tartar) in a small porcelain pitcher or vessel. Cover the mouth of the vessel with a piece of mosquito-netting or strainer, so as to prevent the juniper-berries from pouring out.

Sig.—Stir well the bitartrate of potassium in juniper-berry tea, and drink a wineglassful every three or four hours, so as to consume the entire pint in twenty four hours.

This mixture will induce both purgation and diuresis, and will in many cases rapidly induce the reduction of the most extensive and obstinate dropsies. The tincture and extract or infusion of digitalis will greatly promote the diuretic action of the juniper-berry tea and cream of tartar.

The writer employs 6 to 10 drops of the tincture of digitalis every three, four, six, or eight hours, with marked benefit in many cases of cardiac and renal dropsies.

It is probable that digitalis is used in too large doses and in a reckless manner, and often with fatal results, by many practitioners.

In some cases the practitioner may resort to various diuretics in addition to digitalis, as jaborandi, pilocarpine, uva ursi, buchu, acetate of potassium, nitrate of potassium, sweet spirits of nitre (nitric ether), and other agents.

Several combinations are beneficial, such as the following diuretic wine for œdema, general anasarca, and dropsy in cardiac and renal diseases.

R Fluid extract of jalap,  $\mathfrak{f}$ zii;  
Fluid extract of squills,  $\mathfrak{f}$ ziii;  
Fluid extract of jaborandi,  $\mathfrak{f}$ zi;  
Fluid extract of digitalis,  $\mathfrak{m}$ xxx;  
Nitrate of potassium (pulv.)  $\mathfrak{z}$ iv;  
Angelica wine, Oii. M.

Sig.—One tablespoonful every three hours.

This diuretic and purgative wine has given the most satisfactory results in the speedy and wonderful relief of the most extended dropsical effusions resulting from valvular disease of the heart.

A diuretic mixture similar to that of Fothergill is also useful in dropsy resulting from cardiac disease, as,—

R Spirits of chloroform,  $\mathfrak{f}$ ziv;  
Acetate of potassium,  $\mathfrak{z}$ iv;  
Tincture of digitalis,  $\mathfrak{f}$ zii;  
Infusion of buchu to make in all  $\mathfrak{f}$ 3x. M.

Sig.—One to two tablespoonfuls every two to four hours.

We have thus presented a few practical observations and suggestions, with the hope that they may prove of practical value.

In the treatment of the dropsical effects of hepatic, portal, cardiac, and renal lesions and obstructions with purgatives and diuretics, the physician should endeavor to sustain the strength of his patients. No fixed rule can be laid down as to the amounts of the various diuretics and purgatives to be used in any given case; each case should be carefully examined and studied, and the effects of each remedy used carefully watched. The results of the treatment will depend largely upon the nature and extent of the organic lesions.

In cases of ascites dependent upon cirrhosis of the liver, much may be accomplished by purgatives and diuretics to prolong life and overcome the constant tendency to the accumulation of serous fluid in the abdominal cavity, and when these measures fail, we must remove the fluid by the trocar.

In many cases of cirrhosis and ascites, caused by excessive spirit (alcoholic) drinking, we have frequently removed by successive tapplings hundreds of pounds. Sooner or later these cases of ascites perish from the exhaustion caused by the repeated tapplings. In one case of cirrhosis of the liver occurring in an Irish laborer, who had consumed enormous quantities of rum, gin, and whiskey, it was necessary to evacuate the serous fluid from the abdominal cavity almost every seven or twelve days; from one to two gallons of serous fluid were evacuated at each operation. The patient died at the end of the sixth operation. Throughout his illness his intellect was clear.

In ascites resulting from the cirrhotic condition of the liver, death speedily ensues, if the distended abdomen of the patient is not relieved by the trocar.

Under all circumstances, and even in necessarily fatal cases, the physician may accomplish valuable service by relieving suffering and prolonging human life.

## THE ACTIONS OF URETHANES.

In an elaborate research, PAUL BINET (*Revue Médicale de la Suisse Romande*) has studied the actions of ethylurethane, methylurethane, acetyl-ethylurethane, acetyl-methylurethane, and thio-urea. In regard to the first four bodies, the author has found that the introduction of the radical acetyl ( $C_2H_3O$ ) in the group  $NH$ , of the ethers of carbamic acid is followed by no remarkable alteration in the toxic phenomena produced. Again, this radical, being inactive, overpowers the molecule, so to speak, and diminishes its toxicity. For example, in the young white rat, weighing about one hundred grammes, the minimum fatal doses by subcutaneous injection are as follows: Methylurethane, from .40 to .45 gramme; acetyl-methylurethane, from .80 to .85 gramme; ethylurethane, from .20 to .25 gramme; acetyl-ethylurethane, from .50 to .55 gramme. The increasing toxicity, taking 1 as the unit, may be put down in this manner: Acetyl-methylurethane, 1; acetyl-ethylurethane,  $1\frac{1}{2}$ ; methylurethane, 2; acetyl-methylurethane, 4. These figures indicate the relative toxicity among these substances in the case of the rat. Otherwise considered, the acetyl derivatives are about one-half less poisonous than the corresponding urethanes. As to their molecular weight, these bodies may be grouped in an ascending order, as follows: Methylurethane, 75; ethylurethane, 89; acetyl-methylurethane, 117; acetyl-ethylurethane, 131. The toxicity does not, therefore, increase in relation to the molecular weight when looked upon in the arrangement just described, but it does increase in relation to the molecular weight when the urethanes and their acetyl derivatives are considered separately. Thus, for instance, ethylurethane possesses at the same time a greater toxicity and a greater molecular weight than methylurethane; similarly, the acetyl derivative of ethylurethane possesses a greater toxicity and a greater molecular weight than acetyl-methylurethane. On the other hand, the acetyl derivative of ethylurethane, although it has a greater molecular weight, is less toxic than ethylurethane; the same may be said in regard to acetyl-methylurethane and methylurethane.

The author has also endeavored to determine whether the toxicity of the molecule itself is in any way modified by the introduction of the acetyl radical. Dividing the toxic doses by the respective molecular weight, the following figures were obtained, indicating the relative proportion of molecules contained in each dose: Acetyl-methylurethane, 7; methylurethane,  $5\frac{1}{2}$ ; acetyl-ethylurethane, 4; ethyl-

urethane,  $2\frac{1}{2}$ . Now, taking 1 as the unit of toxicity for acetyl-methylurethane, the following are the relative molecular toxicities for these different bodies: Acetyl-methylurethane, 1; methylurethane,  $1\frac{1}{2}$ ; acetyl-ethylurethane, 2; ethylurethane, 3. In other words, the molecule of acetyl-ethylurethane is twice as toxic as that of acetyl-methylurethane; that of ethylurethane three times as toxic, and so on.

The author proposes to term *molecular toxicity* the relative toxicity of bodies with regard to the numerical proportion in the number of molecules contained in the toxic doses. It is obtained by dividing the toxic dose by the corresponding molecular weight of the body. The molecular toxicity of the urethanes is expressed thus: The molecule of ethylurethane is twice as toxic as that of methylurethane; similarly, the molecule of acetyl-ethylurethane is nearly twice as toxic as that of acetyl-methylurethane. The relative toxic powers of the urethane are not, therefore, notably altered by the introduction of the acetyl radical. The introduction of this radical in the group  $NH$ , of the urethanes diminishes the toxicity of the molecule; the loss is about a third. Thus, the relative molecular toxicity of acetyl-ethylurethane being represented by 2, that of ethylurethane is represented by 3, a difference of one-third. Similarly, the molecular toxicity of acetyl-methylurethane being 1, that of methylurethane is  $1\frac{1}{2}$ , a difference of one-third.

The preceding results were obtained in albino rats; similar results were observed in other animals, with slight differences. The rabbit and the rat are more susceptible to the action of urethanes than the dog. Both the rabbit and the rat exhibit more or less the same susceptibility to the influence of urethanes. Thus, for the rabbit the urethanes show a toxicity similar to that seen in the rat, the toxic doses being practically the same. This is shown by the following figures, obtained for every one hundred grammes of the animal's weight: Acetyl-methylurethane, .50, toxicity, 1; acetyl-ethylurethane, .40, toxicity,  $1\frac{1}{3}$ ; methylurethane, .25, toxicity, 2; ethylurethane, .12, toxicity, 4. Therapeutically considered, the acetyl derivatives of the urethanes, being less active, appear to be more advantageous than the corresponding urethanes.

From the results of this investigation the author draws the following general conclusions:

1. The first bodies of the series of urethanes are more active proportionately to the increase

in molecular weight of the combined alcoholic radical.

2. The acetyl radical introduced in the group  $\text{NH}_2$  of the urethanes does not notably modify the physiological properties of the molecule, but diminishes the toxicity of this by an equivalent weight. For the rat and the rabbit the relative toxicities, in an ascending order, are as follows: Acetyl-methylurethane, 1; acetyl-ethylurethane,  $1\frac{1}{2}$ ; methylurethane, 2; ethylurethane, 4.

3. The term *molecular toxicity* is applied to the relative toxicity determined by the quotients of the toxic doses divided by the molecular weights. Such toxicity is diminished by the introduction of the radical acetyl in the group  $\text{NH}_2$  of the urethanes.

4. The physiological action of the urethanes, like that of their acetyl derivatives, consists essentially in a narcosis of the central nervous system, during which the great functions are not interfered with. Under toxic doses the animal succumbs from collapse, with progressive relaxation and weakness of the heart.

#### THE TREATMENT OF SMALL-POX BY MERCURIAL BATHS AND INUNCTIONS.

R. RICHARDIÈRE (*L'Union Médicale*) publishes an interesting report of the cases of small-pox occurring at the Hospital d'Auber-villiers from February 15 to the end of December, 1892. There were in all one hundred and ninety-seven cases,—one hundred and five of true variola and ninety-two of varioloid. Out of the one hundred and ninety-seven patients, fifteen died, giving a mortality of 7.5 per hundred. Of eighty patients subjected to the antiseptic treatment, only ten died, a result which may be considered good, since in most of these cases the disease assumed the gravest character. The cause of death in these ten cases was adynamia in five of the confluent variety of the disease, diffusive suppuration of the neck and broncho-pneumonia in one each, diffusive gangrene of the lungs in an alcoholic, hemorrhages in an advanced tubercular patient, and uræmia in one case of infectious nephritis. Among the complications which occurred in the non-fatal cases are mentioned: Unilateral epididymitis (non-suppurative), 1; more or less intense pulmonary congestion, 4; broncho-pneumonia, 2; dry pericarditis, 1; phlegmasia alba dolens during convalescence, 2; bed-sores. 1. The majority of patients made a good recovery, without presenting during the period of convalescence such complications as furunculosis, ecthyma, or

multiple superficial abscesses, so frequent before the antiseptic treatment of small-pox was instituted. Erysipelas was *never* observed. As intimated, suppurations during convalescence were exceedingly rare, occurring only twelve times in the one hundred and ninety-seven cases of small-pox observed, and of these twelve, seven cases belonged to varioloid patients or those in whom the mercurial bath was not applied. On the whole, the treatment has given satisfactory results. It consists simply in the application of mercurial baths and inunctions. The patients are bathed twice a day at regular intervals. The bath must have an ordinary temperature,—that is, from  $33^\circ$  to  $35^\circ$  C.,—and must be of a duration of fifteen minutes. Each bath must contain ten grammes of corrosive sublimate dissolved in alcohol. These baths are given twice a day up to the time when the bodily temperature has declined definitely, or just up to the end of the suppurative stage of the malady. During the period of desiccation one bath every twenty-four hours is sufficient. After the crusts begin to fall off, the mercurial is substituted by a simple bath containing some boric acid in solution. The mercurial baths act upon the pustules of the trunk and extremities, but not upon those of the face. The latter are best treated, according to the author, by the following method: The head and face of the patient are covered by muslin bandages that have been previously dipped in a solution of corrosive sublimate of the strength of fifty centigrammes to the litre. A sort of helmet or casque is formed with this bandaging, leaving intact, of course, the natural openings, such as the eyes, nose, and mouth. The bandage is allowed to remain during the course of the disease, and after its first application is simply wetted several times a day with the mercurial solution, without removing it. This method is of great value and is well borne by the patients. The author affirms that cases of small-pox treated in this manner do not exhibit any form of dermatitis or vesicular eruptions following often the local application of mercury. In the cases reported a milk diet was strictly observed; ordinary diet was only allowed two or three days after the bodily temperature had assumed a normal character. No remedial agent was administered internally, and only in adynamic cases was stimulation resorted to.

#### THE ANTIPYRETIC ACTION OF GUAIACOL WHEN LOCALLY APPLIED.

This subject, first, we believe, brought to the notice of the profession by an article of Bard,

and of which we published an abstract in a recent number of the *GAZETTE*, receives support in the results obtained in three tubercular cases reported by E. ROBILLIARD (*Gazette Médicale de Paris*).

The author concludes as follows :

1. The local application of guaiacol diminishes the temperature more rapidly and constantly than the sulphate of quinine. This reduction is considerable, consisting of several degrees.

2. The part of the cutaneous surface selected, like the extent of it, is of no importance. The drug has been applied over the chest, on the arms, and over the thighs, without observing any difference in the results.

3. The dose of guaiacol employed may vary, but it seems that the application of .50 gramme is sufficient to produce excellent effect. I believe that the question of purity of the drug is of the greatest importance. I have made applications with an impure guaiacol, resulting in the production of an intense burning and redness over the skin.

4. Patients favor the medicament under consideration. They soon feel the good effects. All those that I have observed have exhibited a considerable increase in the perspiration and a marked taste of guaiacol in the mouth. The secretion of urine is apt to be abundant. I have searched for the presence of guaiacol in the urine, but the results have been negative. However, it is sufficiently demonstrated that the medicament is absorbed from the skin. The taste of the guaiacol appearing in the mouth of patients cannot be attributed to the introduction of the drug by the breathed air, since care has been exercised in covering the applications with impermeable court-plaster and a good bandaging. That the antipyretic effects of the drug are not due to the imagination is evident from the fact that I have made applications with water colored with carmine, and no reduction of the temperature has been noticed in these instances.

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*THE SEDATIVE ACTION OF DUBOISINE,  
WHEN GIVEN IN CONTINUED  
DOSES, IN THE TREAT-  
MENT OF THE  
INSANE.*

Under the above title, E. MARANDON MONTYEL (*Archiv. de Neurologie*) publishes interesting details of thirty-five cases of mental derangement treated by duboisine.

From the results obtained the author formulates the following conclusions :

1. Duboisine is a marvellous sedative, capable of allaying always and in all cases lypemania and maniacal excitement, whether of a vesanic or of a paralytic nature, and of producing an absolute calmness in excitable or the most violent cases. The action of the drug is always effective and manifests itself in two phases,—the one an incomplete attenuation of the excitement; the other a complete one, characterized by a total disappearance of the pathological condition, and which lasts for a more or less lengthy period of time.

2. The sedation caused by duboisine is not always of the same intensity; generally, it does not come on until the second day, sometimes not until the third day after the administration of the drug.

3. Once produced, the sedation of the drug is maintained steadily, provided a habit is not made manifest; exceptionally, good and bad days alternate.

4. The action, even when complete, often persists one or two days after the ingestion of the drug has been stopped, and sometimes longer.

5. In the intermittent or remittent forms duboisine is capable of reducing the duration of the crises and of prolonging the intervals between them.

6. The sedative action of duboisine, particularly during the first days of its administration, is generally in inverse ratio to the time which has elapsed after the ingestion of the remedy, and hence the advantage of giving the daily amount of the medicament in two doses.

7. The action of duboisine is more frequently complete in chronic than in acute mania; and, on the contrary, more so in acute than in chronic lypemania.

8. In general paralysis the complete action of duboisine is less frequent than in chronic mania or acute lypemania, but more so than in acute mania or chronic lypemania; and, similarly, more frequent than in mania or lypemania in general; so that, in a total of cases of general paralysis, the sedative influence of the drug was more marked in these than in those cases of a vesanic nature.

9. The organism of the class of patients here considered becomes often and quickly accustomed to the influence of duboisine, and this habit—which, as a rule, is established abruptly—once produced, rebels, ordinarily, to increased doses of the drug; this is true particularly in regard to the production of complete sedation.

10. The duboisine habit occurs more frequently and more rapidly in cases of general paralysis than in those of a vesanic nature, or

of acute and chronic mania and chronic lypemania; it is the same in general paralysis as in acute lypemania, and of more frequent occurrence in lypemania than in mania; finally, it does not come on in chronic vesanic cases.

11. The incomplete action of duboisine is less frequent in general paralysis than in vesania, but more frequent than in chronic mania and acute lypemania; it is less frequent in mania than in lypemania, in chronic than in acute mania, in acute than in chronic lypemania.

12. In general terms, it may be said that duboisine is more active in cases of general paralysis than in vesanic cases, in mania than in lypemania, in chronic than in acute mania, and, *vice versa*, in acute than in chronic lypemania.

13. Owing to the influence which duboisine exercises on the stomach, it is better to administer the drug, in order to obtain a sedative effect, during the day and as long after each of the two principal meals as possible.

14. Unfortunately, duboisine acts in a deleterious manner on the process of nutrition, especially when given for a long time. This action is to be feared, and, notwithstanding the marvellous sedative properties of the drug, is a drawback to its employment, particularly when the use of the medicament is to be prolonged.

#### THE VALUE OF ANTISEPSIS IN THE TREATMENT OF HEPATIC COLIC AND BILIARY LITHIASIS.

An interesting article is published by E. CASSAET and L. CORNET (*Archiv. Cliniques de Bordeaux*), containing the details of two cases of the nature referred to above, in which happy results were obtained by antiseptic treatment. In Case I. all the troublesome symptoms of biliary retention yielded to the action of salicylate of sodium combined with large doses of olive oil, by the elimination of a very large calculus. The dose of the salt was 5 grammes during a period of twelve days, followed by the ingestion of 300 grammes of olive oil in six doses, at intervals of half an hour, for three days. In Case II. the same symptoms disappeared under the use of large quantities of corrosive sublimate. The first dose of 30 grammes of Van Sweiten's liquid, in two equal amounts, morning and evening, was given. A second dose of 50 grammes was then administered, divided in three equal parts, at intervals of several hours, the patient taking in the mean time large quantities of milk. A third dose of 100 grammes, in four equal amounts, during the

day, was ingested, associated with the administration of 300 grammes of milk. The most important result in both cases was the rapid disappearance of the infectious symptoms attending the migration of the calculi. The authors entertain the hope that the use of the salicylate of sodium in long-continued doses, and that of corrosive sublimate in massive amounts, if necessary, may in every case abate the serious phenomena of angiocholitis and post-calicular cholecystitis, not only by preventing the formation of new calculi, but also by provoking the expulsion of those already in existence.

#### THE INJECTIONS OF NERVE-SUBSTANCE IN THE TREATMENT OF THE INSANE.

A. CULLERRE (*Gazette Méd. de Paris*) publishes the details of fourteen new observations with the use of nerve-substance in the treatment of insane patients. The author summarizes his experience as follows: The injections of nerve-substance, practised aseptically, are inoffensive. They have the property of increasing nervous power, especially that presiding over nutritive functions. They are, therefore, useful in the treatment of mental derangement. The first effect of this mode of treatment of the insane is the amelioration of the appetite. Certain patients, particularly those subjects of a more or less prolonged abstinence, show an almost bulimic disposition, their appetite becoming insatiable. The bodily weight increases in a short time and often to a considerable extent. Muscular power is renewed; the organic functions become regular; menstruation reappears; uterine hemorrhages disappear, as do the neuralgias accompanying them. The cachectic state, when not the result of an organic affection, such as nephritis, cancer, etc., is not a contraindication to the employment of the injections, and, on the contrary, these are of service. Tubercular patients are sometimes benefited by them. This medication appears to be efficacious in the course of certain acute maladies, when the usual modes of treatment have proved of no avail, and when an unfavorable prognosis authorizes the use of bold therapeutic means. But, notwithstanding all these merits, the injections of nerve-substance have failed to strengthen the hopes we had entertained after the happy results obtained in the treatment of neurasthenia. *They are impotent against the psychopathic element itself.* The mental state, in curable cases, is only slightly influenced by the injections of gray substance, and sometimes only ameliorated for the time being, during the

few hours immediately following such injections; but this effect (with the exception, perhaps, of a single case, not fully demonstrated at that) does not persist, and no lasting amelioration is obtained.

#### *TREATMENT OF PERFORATED GASTRIC ULCER.*

Naturally the most disastrous accident which can occur to the patient suffering from gastric ulcer is perforation, and the results are more to be dreaded than acute hemorrhage. In the *Birmingham Medical Review*, MR. BARLING contributes a paper on this subject.

The record of his three cases is so instructive that they will bear careful inspection. They emphasize many points. First of all, that a patient may die of perforation without anything in the previous history to suggest the presence of an ulcer of the stomach,—that is, the ulcer is latent. In two cases the history points to a period of quiescence in the symptoms for some time before perforation took place. Then it will be noticed that in the first two cases the perforating ulcer was on the anterior wall of the stomach,—a point of some importance in the treatment, because here the ulcer will often be accessible for suturing. The general impression appears to be that most of the perforations are to be found on the posterior wall, or, at all events, not on the anterior; but it is to be doubted if this would be borne out by statistics. Again, these three cases indicate the class of patients most subject to the accident of perforation; all of them were young women and all taken from the same social class.

One of the most important points they illustrate, however, is that cases of perforation may vary greatly in acuteness and intensity. Nothing could well be more acute or intense than the peritonitis found in Case I., in which the abdomen was opened six hours after the perforation had taken place. In Case II., on the contrary, the escaped stomach-contents were evidently circumscribed for a time between the liver and the stomach, and the peritonitis was of a milder degree and more limited in area, so much so that perforation was hardly suspected by those who first saw the patient. In the third case the escape of stomach contents was so limited that the peritonitis was quite mild, and subsided almost entirely until the twentieth day, when the acute symptoms developed.

The fact should be emphasized that though some patients die almost outright from the

shock of perforation, and a majority in from twenty-four to thirty-six hours from an intense peritonitis, yet in a few cases the symptoms are subacute, or even subside for a time, to be followed by an acute extension which will prove rapidly fatal.

What is the fate of a patient with an ulcer of the stomach which has perforated, if surgical measures are not resorted to? Available statistics do not show, but from a careful scrutiny of numerous cases the mortality is not exaggerated in giving ninety-five per cent. or greater. In medical literature every now and then one comes across a case of recovery recorded, and though not all of these are conclusive, yet there are sufficient cases submitted to autopsy to demonstrate the possibility of recovery by the ordinary treatment for peritonitis and keeping the stomach empty. It is necessary to realize the fearful mortality of perforation, because failure will often follow on surgical interference, and it may excite regret that the disease was not treated by medical means only. The right way to view the matter is to regard each patient who recovers after operation as one saved from almost certain death.

Before speaking of treatment it is advisable to see what it is we may be called on to treat. From a scrutiny of numerous cases it is clear that we may have at least three conditions present,—1, a very acute and widely-spread peritonitis; 2, a circumscribed peritonitis, which may or may not eventually become diffused; 3, a circumscribed peritonitis which is mild in its commencement, which eventually suppurates and gives rise either to an acute and fatal peritonitis or perforates into an adjacent cavity, as the thorax or colon. The diagnosis of perforation of the stomach is, as a rule, not difficult. The patient is commonly a young woman, oftenest of the servant class, or an elderly male. There is very generally a history of indigestion, which has given rise to the suspicion of gastric ulcer even if a positive diagnosis has not been made, but the symptoms may have been in abeyance for a time before perforation takes place. The symptoms of perforation are generally unmistakable. The patient complains of intense or, at all events, of very severe pain in the abdomen, this generally after a full meal or after making some exertion. The pain is wide-spread, and collapse sometimes of a profound character follows. The pain may later be localized to the upper part of the abdomen or to the left hypochondrium. Vomiting sets in, the pulse is quick and small, the belly becomes rigid and tender. Then we have the usual phenomena of a very

acute peritonitis if the patient survive the immediate shock,—abdominal distention, rapid breathing and pulse, pinched facial look, lividity of the lips and extremities. An occasional sign which has been made much of is the diminution—in some cases the disappearance—of liver dulness, which may be due either to the presence of free gas in the peritoneal cavity, from the stomach, or to a distended coil of bowel getting in front of the liver.

A diagnosis, then, can usually be made; but occasionally the progress of the case appears to throw doubt upon it. This was so in the third case; and, curiously enough, a somewhat similar case occurred in an adjacent house, in which perforation was diagnosed. A girl with symptoms of gastric ulcer was, after a period of quiescence, seized with extreme pain in the abdomen, collapse, tenderness on pressure, and vomiting. With morphine and complete rest for the stomach, the symptoms so completely subsided that the diagnosis was much doubted; but the following day an attack of retching brought on a further leakage from the stomach, and the patient speedily died, the conditions mentioned being substantiated by autopsy.

A diagnosis of perforation having been made, operation should follow as speedily upon it as circumstances will allow. It is not possible to tell in the early hours whether the escape of stomach contents is much or little, whether the perforation is on the anterior or posterior wall of the stomach, or whether there is any probability of the extravasated food, etc., becoming localized. Under these circumstances, and recognizing the terrible mortality of perforation, it seems to be clear that *early operation* is urgently called for always when perforation has been diagnosed.

*Operation.*—With the limited experience at present available, it is undesirable that one should speak too dogmatically as to the exact lines to be followed, but the following are the main outlines. The abdomen should be opened in the middle line above the umbilicus, but not too near the costal margin. Positive evidence may at once be found of perforation in the presence of free gas or food. The area between the stomach and liver should be examined with care, so that any localized collection here should, if possible, be prevented from soiling the more distant parts of the cavity. Any extravasated matter having been removed, the perforation should be sought for on the anterior wall, especially towards the lesser curvature, where it will most commonly be found to exist. A perforation being found here, if accessible, should be sutured, the sutures being

applied with the stomach outside the peritoneal cavity, if this can be managed; but it will not always be possible. It will be wise to first pass a piece of drainage-tube into the hole in the stomach and run off any fluid the organ contains. In my second case, although no food had been administered for some time by the mouth, there were several ounces of thin, almost watery, fluid in the stomach, just like the material so constantly vomited in peritonitis, and which kept leaking from the perforation until it was completely removed by the tube. The most convenient form of suture to use is probably Lembert's; but if the hole to be closed cannot be brought outside the abdomen, the operator will find that he has a difficult task before him. It has been recommended that the edge of the ulcer should be pared before suturing. This was not necessary in the only one the author has sutured, for the edges of the ulcer were so tough as to hold the sutures well. If it were found that the edge was too friable, excision of it might be advisable; but even then the case would perhaps be met better by an extensive infolding of the margin, which could be done easily and without risk of kinking in the stomach. The objection to excising the margin is that it takes time to effect, and one of the most important factors militating against recovery in cases of this kind is prolonged exposure on the operating-table. If the ulcer cannot be sutured, it may possibly be stitched to the lower angle of the abdominal incision. If the perforation be inaccessible for suturing and cannot be brought up to the incision, the only resource left to the surgeon is drainage with a tube leading directly to the point of leakage. Though this falls short of the more complete proceeding, yet drainage has been found so efficient a protection against the extravasation of other fluids—as, for instance, bile—that one cannot but feel hopeful of it in this condition. Whether suturing be possible or not, it is of the greatest importance that the abdominal cavity should be washed out and thoroughly flushed with hot water. When the flushing out has been done, the drain should be placed *in situ* close to the perforation, whether it has been sutured or not. Something more than this is necessary, however. A second tube should be inserted into the abdomen just above the pubes, otherwise the drainage of the peritoneal cavity will be very imperfect, and a considerable quantity of fluid will collect in the pelvis and greatly interfere with a successful issue. It is probable that this accumulation interfered with the well-doing of the second case.

In the more chronic cases, such as the third,



the treatment should be different. An incision directly on to any inflammatory mass would be the right procedure, and in the event of pus or other fluid being found, this should be evacuated with the greatest care, to prevent fouling of the general peritoneal cavity. For this reason sponging is to be preferred to flushing for cleansing purposes, as the irrigation may carry infective particles to more distant parts, whence they cannot escape again, but may set up fresh mischief. A drain to the bottom of the abscess cavity is then required, and all that can wisely be done has been done. To search for the perforation, with a view to closing it, would be useless and dangerous.

Finally, for success two things are necessary,—*early diagnosis* by those who first see the case, and *operation* following on this as early as possible. Here hours are of as much importance as days in other conditions; in fact, there is hardly any emergency more urgent in the whole of surgery.

#### DEATH FROM NITROUS-OXIDE GAS.

Death from inhalation of nitrous-oxide gas is so unusual that any case should be reported and studied with interest. In the *Medical News*, THORNBURY reports such an accident.

Following some preliminary remarks regarding the effects of nitrous oxide, the following brief report is made of an autopsy in this particular case. The autopsy was held upon a woman who died after the administration of four gallons of nitrous-oxide gas by a dentist for the extraction of four teeth. Soon after the induction of anæsthesia the patient began to show signs of embarrassed breathing. Medical consultants were summoned. The pulse became rapid and attempts at breathing spasmodic. Artificial respiration was resorted to; the lower extremities were elevated. Nitro-glycerin ( $\frac{1}{100}$  grain) was administered hypodermically, and ammonia applied to the nostrils. The patient seemed to rally for a short time, but unconsciousness continued, the pulse became more rapid and feeble, and the heart's action finally ceased.

The body was that of a middle-aged female, fairly developed and poorly nourished. Post-mortem rigidity was slight. Post-mortem staining was present over the pendent portions of the body. The median incision showed the subcutaneous fat to be small in amount. No pleuritic adhesions existed in the thorax. The right lung weighed sixteen ounces, and was universally congested and œdematous; there was exudation of a large quantity of frothy serum. The left

lung weighed thirteen and a half ounces, and was also congested and œdematous. The lining membrane of the bronchi upon both sides were intensely hyperæmic and the tubes partially filled with frothy exudate. The heart weighed ten ounces, and was of normal size and color. The ventricles were firmly contracted, and the walls of the left ventricle were slightly thickened. There was a dark clot in the chorda of the mitral valve. There were three minute athromatous areas in the posterior wall of the aorta just above the segments of the valve. Over the anterior surface of the œsophagus were two areas of hemorrhagic extravasation, irregular in outline and about the size of a half-dollar. The tracheal mucosa was heavily coated by a frothy, removable mucus.

The larynx was congested, and the lining membrane was also covered with frothy, slightly blood-tinged mucus. The congestion was especially marked in and just below the ventricles. The aryteno-epiglottidean folds were considerably corrugated, suggesting pre-existing œdema. The position of the viscera was normal. The spleen was dark, moderately firm, normal in size and in consistency. The kidneys showed a dark-bluish discoloration; the surface was smooth, the capsule non-adherent. The right was slightly smaller than the left, and contained a blood-clot beneath the mucosa of the pelvis and the true renal substance. This clot occupied an area one-half a square decimetre in extent. The ureters were normal and the bladder empty. No urine was obtained for analysis. The liver was normal in size; its weight three pounds. The stomach was normal in size and contained about six ounces of partially-digested food. The mucous membrane was coated with thick, semi-tenacious mucus; the membrane was slightly slate-colored in appearance. The intestines were normal. The uterus showed catarrhal endometritis, and there was a small quantity of mucus in its cavity. The left ovary showed a very recent corpus luteum and there was also a small cyst present. The right ovary and the tubes were normal. The brain was not examined, owing to inability to obtain the consent of the coroner.

This case illustrates the invariable presence of danger in the administration of anæsthetics, even of the supposed harmless "laughing gas."

#### TREATMENT OF DIABETIC COMA.

In the London *Lancet*, HARLEY contributes a valuable paper on diabetic coma, and concludes as follows:

The rational treatment founded on the re-

sults obtained from the above-mentioned experiments is to administer alkalies. If the symptoms are urgent and time is of moment, sodium carbonate might be administered subcutaneously or intravenously, as recommended by Stabelmann, the pulse being carefully watched in case of heart-failure. At the same time, since the author's experiments have shown so great a diminution in the oxygen absorbed, it is advisable to encourage oxidation. The inhalation of pure oxygen may help, as well as trying to improve oxidation by massage. Diuretics, together with large quantities of fluids, will be of value in increasing the rapidity of the elimination of the toxic products derived from the sugar. These are the means suggested to ward off attacks of diabetic coma, or even to diminish the severity of a coma already set in.

#### INTRACEREBRAL HEMORRHAGE.

ESKRIDGE contributes a paper on this subject to the *Medical News*. He thinks that most patients while in the apoplectic state from cerebral hemorrhage would do better without medicine than they do when medicine is simply administered with the hope of doing some good, but the administration of which is not governed by any logical or rational principle.

If we bear in mind that in hemorrhage into the cerebral substance, not traumatic in character, the immediate cause of the hemorrhage is the bursting of a miliary aneurism, we shall appreciate how futile must be our efforts to arrest such a hemorrhage by the administration of medicine. Immediately after the occurrence of the event the indications are to allow the effused blood to coagulate, to promote the flow of the venous blood from the head, to quiet the heart's action, to allay the restlessness of the patient, when such exists, and to prevent an undue amount of blood being carried to the head. We can render the best service in aiding the coagulation of the effused blood by keeping the patient absolutely quiet. The flow of the venous blood is promoted by slightly elevating the head and shoulders, and not allowing the head to be bent forward, and thus compressing the veins of the neck. The heart's action is best quieted by the careful administration of small and frequently-repeated doses of aconite, when there are no contraindications to the use of this drug. Restlessness, when considerable, is most effectually relieved by a hypodermic administration of  $\frac{1}{4}$  grain of morphine; when it is slight,

sodium bromide is effectual. Various means are at our command to lessen the flow of blood to the head; sometimes one or two, sometimes all, should be employed. Brisk purgation should almost always be resorted to. If the stomach is not irritable, one drop of croton oil in ten drops of sweet oil should be placed on the tongue every hour until the bowels are opened freely. When the stomach is irritable, ten grains of calomel should replace the croton oil. Whether calomel or croton oil is employed, an enema, consisting of one ounce of salts, a half-ounce of glycerin, and four ounces of water, should be thrown up the large bowel as soon as possible after the occurrence of the hemorrhage. Mustard-plasters applied to the back of the neck, the front of the chest, and on the calves of the legs aid in lessening the quantity of blood carried to the head. Blood-letting is sometimes indicated, but cases necessitating the withdrawal of blood by opening a vein are probably rare.

In regard to the administration of ergot in the cases of cerebral hemorrhage under discussion, it does no good whatever, and there is a possibility of its doing harm. The practice of applying cold to the head, especially ice, in cases of non-traumatic, intracerebral hemorrhage is reprehensible. It seems rational to suppose that it may increase the engorgement of the intracerebral vessels. When the face is turgid, the head warm, and the carotids throbbing, ice-cloths or iced poultices may reduce the heat of the head and promote the coagulation of the effused blood.

It will be seen that the only routine treatment recommended for intracerebral hemorrhage is brisk purgation immediately after the occurrence of the accident, to which may be added the application of mustard-plasters to various portions of the body. In the subsequent treatment, during the acute stage, indications must be met as they arise. In the chronic stage, electricity and strychnine must be used with judgment and great caution. The routine employment of these two agents to overcome the paralysis does much harm by causing irremovable contractures of the arm and leg of the affected side. In this stage strychnine should not be employed when contractures are present or when the deep reflexes are greatly exaggerated. We must remember that no hard-and-fast rules can be laid down in regard to the use of strychnine. The author has seen cases in the acute stage in which this drug, in combination with aromatic spirit of ammonia, has done good service. When electricity is applied,—and, as a rule, it should not

be before the end of the fourth or sixth week,—the extensor muscles only should be stimulated, and during the application the extremities should be held in their normal positions. Massage, systematic exercise, Swedish movements, and time do most to overcome the residual paralysis of intracerebral hemorrhage.

#### THE TREATMENT OF CHOREA.

For a number of years, ESKRIDGE, of Denver, has refused to assume charge of a case of chorea if the parents and friends will not consent to follow his instructions. In the very mildest cases, in which there is only an occasional grimace of the face or an infrequent twitch of the muscles of the hand or foot, he allows the patient to sit up part of the day and spend the remainder of the waking hours on a lounge. No violent or exciting exercise, such as romping, running, etc., is allowed. The patient is placed on a nutritious, digestible, but non-stimulating diet. The stomach and bowels are kept in as good a condition as possible. The patient, to begin with, receives as many grains of antipyrin at bedtime as he is years old, and the dose is increased one grain each night until all twitching stops. At the beginning of the treatment of these mild cases he commences with 1 drop of Fowler's solution after each meal, and increases the dose one drop each day until the point of tolerance is reached; then the arsenic is discontinued for two or three days, or until all unpleasant effects of its administration have passed away, when the drug is again resumed at the dose reached when it was stopped. The dose is again increased one drop each day until tolerance is reached, when it is discontinued, and resumed after two or three days as before. As soon as the twitching ceases, the antipyrin at bedtime is discontinued, and the patient is given syrup of the iodide of iron after each meal, in from 3- to 10-drop doses, depending upon the age of the patient. The arsenic and iron are continued for two or three weeks after all symptoms of the disease have disappeared and the patient has regained considerable flesh.

In all except the mildest cases, to which reference has just been made, absolute rest in bed, day and night, is insisted upon from the first. If he had to rely upon one method of treatment in the management of chorea, to the exclusion of all others, he should unhesitatingly choose absolute rest in bed. When the little patient is placed in bed to begin its treatment (we will suppose it to be a child of a few years,

or not more than fifteen years of age), he orders as many grains of antipyrin three times daily, after taking food, as the child is years old, and increases the dose one grain each day until all violent movements stop, when he begins with 1 drop of Fowler's solution after each meal, well diluted in water, and increases the dose one drop each day, in the manner described. About the second or third day after the arsenical treatment has been added, the antipyrin is given only once each twenty-four hours, and the time for its administration is usually about eight or nine o'clock in the evening, thus securing a comfortable night for the little patient. After all but the most occasional twitching has stopped, the antipyrin is discontinued, and syrup of the iodide of iron is given in connection with arsenic. It seems a little heroic to give a child of seven years of age from 10 to 15 grains of antipyrin three times daily, yet he has given a child of eight years 20 grains of antipyrin three times daily, without the slightest apparent depression or untoward effect. Certain precautions, however, are necessary. In the first place, if there is any rise of temperature, perspiration will be free and depression will result. Antipyrin should be avoided in cases in which there is much rise of temperature. In such chloral hydrate takes the place of antipyrin. He has never carried the dose of the former to nearly that of the latter. When there is cardiac weakness, antipyrin and chloral should be given with great care, if at all. When such a complication exists, phenacetin, with a little cannabis indica, seems to quiet the patient. Valvular disease of the heart alone does not seem to contraindicate the employment of antipyrin, but cardiac dilatation does.

While antipyrin is being given the patient must be kept at rest in bed. He has seen considerable depression follow a large dose of antipyrin when the little patient has been allowed to run around. During the administration of large doses of antipyrin or chloral the patient should be seen at least daily, and the urine should be repeatedly examined.

The questions in regard to arsenic in chorea—How large doses may be given? How long should the drug be continued? Should it be kept at the point of tolerance for weeks without intermission, and what unpleasant effects are likely to follow its administration in large doses?—are pertinent.

How large doses of Fowler's solution may be given? As a rule, children from seven to fifteen years of age will bear larger doses of arsenic than adults. So far he has never found

it necessary to give very large doses to children under six years. In a number of instances he has given 20 drops of Fowler's solution three times daily to children from ten to fifteen years old, for a week or more at a time. In the majority of instances the point of tolerance is first reached when the dose has been gradually increased to some 6 or 7 drops thrice daily. After stopping the arsenic for two or three days, or until all unpleasant effects have passed away, and resuming its administration at 6- or 7-drop doses, as the case may be, the next point of tolerance will be attained when the dose has reached 10 or 12 drops thrice daily. In most instances all twitching will have stopped at this time. If such be the case, the medicine is resumed after two or three days, at this dose, but now it should not be increased. It should be given at the dose tolerated when the twitching has stopped, for a week or ten days, then discontinued for two or three days, and resumed again at the full dose. The dose is now lessened one drop each day until 4-drop or 5-drop doses are reached, stopped again for two or three days, and again resumed at 5-drop doses. Arsenic, as a rule, should not be continuously given in full doses for more than eight to ten days at a time. By observing this precaution he has been fortunate enough to avoid the ill effects that some physicians have reported from the continuous use of full doses of arsenic.

How long should the administration of arsenic be continued after all twitching has stopped? As a rule, it should be continued for a month or more after all choreic symptoms have ceased, but not in full doses of toleration for more than a week or ten days, when it should be stopped for a few days; then the dose should be gradually reduced, as recommended.

The next question—Should the large tolerated doses be continued for weeks without intermission?—has already been answered in the negative.—*Medical News*.

#### REMOVAL OF HAIR, MOLES, ETC., BY ELECTROLYSIS.

In the *Medical News*, SORENSON contributes an interesting paper on electrolysis, and reaches the following conclusions:

1. Do not begin with too strong a current.
2. Apply the current for a sufficient length of time.
3. Always apply the negative pole to the part it is desired to destroy.
4. Do not have the circuit closed when you

insert the needle, until you have learned to know your patient *electrically*, if such use of the word be permissible.

5. Always test the strength of your current before beginning. To do this it is convenient to touch the two poles to the tongue, having the points about an inch apart.

#### LOCAL ANÆSTHESIA BY ETHYL CHLORIDE.

GIBSON contributes to the *New York Medical Journal* a paper on ethyl chloride.

Ethyl chloride is one of the newest local anæsthetics. Gibson's experience leads him to believe that it is destined to occupy a useful place among our local therapeutic agents.

There are several preparations made by various firms, and, so far as the author has observed, of equal merit. The preparation the writer uses is that made by Dr. Bengue, of Paris. Its properties are thus described by the maker: "Ethyl chloride is a colorless liquid, with a slight ethereal odor of an agreeable character. The density is .874 at 41° F.; it boils at 52° F.; its vapor density is 2.219. Ethyl chloride is very inflammable, burning with a green-edged flame and setting free hydrochloric acid."

The anæsthetic comes in glass bulbs of the capacity of a little over an ounce. The bulbs are provided with a capillary orifice, upon which a tightly-fitting cap is screwed, preventing evaporation. One bulb furnishes sufficient anæsthesia for six to eight minor procedures. In using this agent the cap is first unscrewed and the bulb held in the palm of the hand, when the liquid will be instantly volatilized by the heat of the body. The bulb should be held horizontally and six to eight inches from the part, playing the stream back and forth as evaporation is produced. At first a hyperæmia results, then pallor, and gradually the part assumes a parchment-like appearance. From one to two minutes is needed, and anæsthesia lasts as long again.

Gibson's experience with ethyl chloride comprises some twenty-five cases of minor surgery, chiefly cellulitis of the fingers, abscesses of the jaw, buboes, sinuses, boils, and carbuncles. Most of the cases were relieved by a single incision, and in such the anæsthesia was most satisfactory. Where more extensive procedures were demanded, where deeper structures were divided, for efficient curetting, etc., the agent was seldom efficient.

Its action in certain cases, however, was ideal. In felons, for instance, the single rapid

incision was generally effected absolutely without pain. Every one that is called upon to incise felons knows how excruciating the pain is. The patient winces at the slightest touch; the introduction of cocaine solutions subcutaneously is almost a cruelty, as intense pain results both from the needle pricks and from increase of the tension in the indurated tissues. Moreover, the cocaine often proves powerless to overcome the aggravated conditions. It is especially in such conditions that chloride of ethyl will prove invaluable.

No attempts to use ethyl chloride were made in procedures requiring more than a few seconds' time, nor where careful dissection was needed, as the agent so changes the character of the tissues. It can, however, be employed to great advantage in removing small sections of tumors for microscopical examination.

It will occasionally be found useful to combine the action of the new agent with that of cocaine.

The author had recently to operate for ingrowing toe-nail on a young child. When he made the first prick of the needle, in order to cocaineize the parts for Anger's operation, the little patient grew so obstreperous that he could do nothing with her. The proposed line of insertion of the needle was then sprayed with the chloride of ethyl, obtaining enough anæsthesia to allow the introduction of the needle without attracting the child's attention, and the battle was won in favor of the operation.

The ethyl chloride will be found of considerable value in dermatological practice, especially for thorough scarification and application of the actual cautery. Dr. Bengue's bulbs intended for dental surgery are provided with curved nozzles, allowing the spray to be deposited on the desired spot. Gibson has had no opportunity to verify the use of this agent in such work. The following are Dr. Bengue's directions:

"In extracting teeth the jet should be directed to the dental nerves, as near their origin as possible; in front of the ear for the upper teeth, behind the angle of the inferior maxilla for the lower ones. The spray should be applied for about a minute; but the anæsthesia thus produced is not so complete as when the jet is applied directly to the gums, and, as this last method is devoid of danger, its use is advised in all cases except those of the last molars, which are not easily reached by the spray."

Differing from the usual action of those agents which act by refrigeration, no bad after-effects, such as great pain or sloughing of the tissues, have been noted by the writer. Care

should be taken that the jet is not brought into contact with a light or incandescent surface, as the substance is highly inflammable. The eye should be protected from the spray. General symptoms of poisoning may be produced by inhalation, according to Crocker.

The writer's attention was first called to the value of ethyl chloride as an analgesic by its success in the hands of a French gentleman in the treatment of a severe intercostal neuralgia. He has found it very efficient in treating the pain of a supraorbital and occipital neuralgia. The jet was played over the painful point for a few seconds at a time, being repeated at short intervals on recurrence of the pain, without the slightest bad after-effect. Dr. Bengue suggests the use of chloride of ethyl in a very extensive class of cases, among which may be mentioned all the forms of neuralgic and rheumatic pains, various hyperæsthetic and reflex conditions, and the various forms of colic.

Chloride of methyl, so far as he has witnessed its action in the hands of others, is identical in results with chloride of ethyl. It is less convenient to use than the preparation with which Gibson has experimented, as it is contained in little bulbs whose capillary end must be broken off before use, thus necessitating the employing of the entire contents at one sitting. A rough estimate of the cost of the ethyl chloride, as used in the above cases, is ten cents for each surgical anæsthesia.

#### POISONING BY CRYSTALLIZED ACONITINE.

VEIL reports in *La France Médicale* the case of a druggist who by accident took a pill containing 12 milligrammes of crystallized aconitine. The poison was taken at half-past eleven in the morning, and on the appearance of the very first symptoms the attending physician administered 20 grains of powdered ipecac and  $\frac{1}{16}$  grain of emetine. The stomach was also washed out. After the vomiting had occurred the patient noticed a sensation of burning in the mouth, about the face, and in the extremities. Forty minutes after the poison had been taken the face was pale, the voice was almost lost, there was a feeling of impending death, and loss of consciousness. The pulse was very small, difficult to count, and the action excessively rapid. The respiration was feeble and irregular. The extremities were cold and the skin was covered with a clammy sweat. At this time rubbing, with the applications of hot-water bottles and the injection of 15 grains of caffeine and 45 minims of sulphuric ether, was

resorted to. The pulse was now 40 to 50 a minute. The vomiting continued. After this iced champagne was administered and stimulating applications with friction were applied to the extremities. On the return of the physician two hours later the condition of the patient was still most alarming: the pupils were dilated, the skin was cold, the pulse completely lost, the respirations almost gone. The pulse was now 30 per minute, and the pupils became excessively dilated; there was also muscular trembling; the vomiting did not cease. At this time 15 grains of caffeine and 30 minims of ether were again given, and produced an improvement in the symptoms. The use of the caffeine to the amount of 7 grains was frequently resorted to throughout the night. The severe symptoms of intoxication disappeared after nine hours. The vomiting ceased during the night, under the influence of chloroform-water and elixir of paregoric. For two or three days the prostration was exceedingly severe, and at the end of the week the patient had not entirely recovered. The case is of interest, in view of the fact that ultimate recovery took place, and also of the valuable results obtained by the injection of massive doses of caffeine.

#### THE HYPODERMIC INJECTION OF THE SALTS OF QUININE.

In *L'Union Médicale* there is an interesting article upon the hypodermic injection of quinine, in which the following solubilities of the various salts are given:

1 part of neutral hydrochlorate is soluble in .66 of water; neutral sulphovinate, .70; neutral lactate, 2.00; basic sulphovinate, 3.30; neutral hydrobromate, 6.33; neutral sulphate, 9.00; basic lactate, 10.29; basic hydrochlorate, 21.40; basic hydrobromate, 45.02; basic sulphate, 581.

The neutral hydrochlorate is by far the most soluble of the salts of quinine for hypodermic use, and is, in addition, rich in alkaloid. The sulphovinate is also very soluble, but is not so advantageous. It has been found that the addition of antipyrin aids in the solubility of the quinine. As is well known, the hypodermic injection of quinine forms an important part of the treatment of cases of severe malarial poisoning.

#### THE HYPODERMIC INJECTION OF SALINES IN CHOLERA.

In *L'Union Médicale* a summary is given of the results obtained by this method. A solution is made, consisting of 5 parts of powdered

chloride of sodium, 10 of sulphate of sodium, and 100 of water. The temperature is 100° F. The quantity of the injection varies from 1 to 3 pints, and they may be given from three to four times a day. In the hospital at Hamburg, Jolasse has collected the following statistics from 1017 cases: Cases treated by subcutaneous injections, 104; deaths 92, cures 12. Cases treated by intravenous injections, 167; deaths 130, recoveries 37. Cases treated by both subcutaneous and intravenous injections, 48; deaths 44, recoveries 4. Cases treated by enteroclysis, 42; deaths 12, recoveries 30. Cases treated by internal treatment, 606; deaths 248, recoveries 358. In addition, there were 50 cases of cholera in which the treatment is not stated.

#### ARTIFICIAL SERUM FOR HYPODERMIC INJECTION AFTER SEVERE SURGICAL HEMORRHAGE.

According to *L'Union Médicale*, CHERON recommends the following mixture for injections under these circumstances:

℞ Sulphate of sodium, 3ii;  
Phosphate of sodium, 3i;  
Chloride of sodium, gr. xxx;  
Pure carbolic acid, ℥xv;  
Sterilized distilled water, 3xxvi.

The inside of the thighs, the abdominal wall, or loose tissues of the back are the proper points for these injections to be made.

#### AN ADDITIONAL NOTE ON THE USE OF STROPHANTHUS IN THE TREATMENT OF EXOPHTHALMIC GOITRE.

At the last meeting of the American Medical Association, DR. E. D. FERGUSON read a paper with the above title. He has not kept a detailed record of the cases coming under his observation, but has had about fifteen or twenty additional cases in which strophanthus has been used. In all of these an improvement has resulted, though the degree of amelioration of the symptoms has varied. In one, a young woman twenty-two years of age, who had exophthalmos in what might be termed a hideous degree, and was incapacitated for even moderate exercise by the tachycardia, the pulse-rate being, even at rest, from 160 to 180, Ferguson was unable to reduce her pulse-rate below 110 or 120; but though in appearance she is not notably improved by the treatment, she is quite gratified with the results, for she is able to attend to household duties and travel for pleasure, even enduring without inconvenience several days

of shopping in an occasional visit to New York City.

So far as he has been able to follow the cases related in his previous paper, the improvement has continued. There was no instance of a relapse, though some have been obliged to continue the use of the drug the greater portion of the time. The first case related in the previous paper—that of a woman now over sixty years of age, and who was an extreme sufferer from the disease—has been able to keep herself in a condition for active exercise by the nearly continuous use of strophanthus.

The fact that the tachycardia is often the earliest manifestation of the disease has enabled the author in two instances to suspect the approaching development of the exophthalmos and the goitre, and so bring the patient under the influence of the drug before notable deformity had occurred in relation to the eyes and the neck, though there was sufficient change to justify the diagnosis before the tachycardia was relieved.

The writer does not urge strophanthus as a specific in Basedow's disease, for while his own experience has uniformly given favorable results, it is manifest that this complexity of symptoms may be associated with irremediable changes in the nerve-centres, or there may be conditions more favorably influenced by other drugs or measures. Many cases benefited by strophanthus may need additional therapeutic agents, and in several he has felt the necessity for the administration of iron, arsenic, and strychnine. It seems that belladonna would prove of value in some cases, and next to strophanthus he regards it as our most valuable agent. He has not observed favorable results from electricity, but the fact that some of the cases are mild and tend to a favorable termination should be taken into consideration in forming our conclusions. He is satisfied that this favorable course in some cases has been the result of the natural tendencies of the disease, rather than any effect of therapeutic measures. In his early use of strophanthus he endeavored to protect his conclusions from error in that direction by limiting its use only to undoubted cases of the disease, but it so happened that the early trials were made in severe cases.

If the individual case is favorably influenced it will then be wise to inform the patient of the probable necessity for a prolonged use of the agent, for though a few months often seem sufficient in some cases, others may require its use for an indefinite number of years.

The question of dosage is one of considerable importance, for it varies greatly in indi-

vidual cases. When strophanthus was first introduced by Frazier its dose was given at from 4 to 7 drops of the tincture, but it was soon manifest that either the individual specimens of the drug differed greatly in potency or personal susceptibility was an important factor. It is true that from 5 to 10 drops will occasionally give notable results, but in his experience Ferguson has shown that much larger doses are often required. His present plan is to have the patient secure a sufficient quantity of the tincture to obviate the necessity for frequent changes of the preparation, and then to begin with 8 to 10 drops at each of the three daily meals, using always the same dropper. After a week, if no benefit results, this dose is increased by one or two drops, and in this way continued and increased until its beneficial results are obtained or until there is evidence of injurious effects, though so far he has not been obliged to cease from its use on account of toxic symptoms. Injurious or unpleasant effects will furnish indications relative to its continuance or the dosage.

In this way he has increased the dosage to 50 drops three times daily—an amount found by actual measurements to be about thirty-five minims—before relief was experienced, and this large dosage has been continued for several months, not only without unpleasant effects, but with great relief.

It seems the part of wisdom to have the patient purchase the drug in considerable quantity at each time, thus obviating the necessity for frequent changes in preparations; and when taking large doses it may be well to take somewhat less than the maximum dose when a new specimen is procured, for it is a clinical fact that the activity of the preparations is not uniform.

#### TOXIC EFFECT OF GALLIC ACID.

BELL (*New Zealand Medical Journal*, No. 3, vol. vi., 1893) reports the following case: T., aged thirty-two, male, had been suffering from internal hemorrhoids for two or three years. Latterly there had been venous hemorrhage with each movement of the bowels, etc. He had tried various remedies, such as cold water, etc., and had touched the piles with tinct. ferri perchlor. and liq. ferri perchlor. to check the bleeding. He had lost about a dessertspoonful of blood a day for two months or more.

Operation was advised, but he wished to give other remedies a trial first, and used hazeline, injected into rectum and also taken

internally by the mouth, for a time with no benefit; also chlorate of potassium. He then got some unguentum gallæ cum opio, and one morning applied it freely to the bleeding hemorrhoid just after a motion. The piles were not painful, and all discomfort ceased when the pile was replaced. There was no bleeding, nor did the pile come down except when the bowels were moved. After using the gall ointment the first time he had an attack of what appeared to be hay asthma; not severe. This was attributed to his having inhaled some irritating dust.

Three or four days afterwards he had a similar asthmatic attack, followed by an eruption of urticaria for three or four hours.

The hemorrhage from the piles still continuing freely at each motion, Dr. Bell asked him to use a 3-grain tannin suppository a short time before and after each movement of the bowels.

In the afternoon, feeling quite well, he inserted a suppository. In about four minutes the symptoms of the asthma began to appear. First there was pain and a tight feeling under the sternum and trouble in breathing; the breathing became quicker and labored, accompanied with wheezing and an occasional cough, until, in about half an hour from the time the suppository was introduced, all he could do was to lie on the bed gasping and straining for breath, face flushed, hot and perspiring, râles and rhonchi all over the chest, and pain on coughing. With each cough a little pellet of mucus was expelled. This condition lasted for another half-hour, and then the pain and rapidity of breathing began to subside, but then the attack of urticaria commenced. Starting about the head and neck, it extended all over the body, and became especially marked about the feet. The irritation and itching were intense. Some of the wheals were from two to three inches in diameter. At the end of about four hours the cough had stopped, the breathing had returned to normal, but the irritation of the skin continued in a less degree till next morning.

The patient has never had any asthma or anything approaching it before or since, nor have any of his relatives ever had anything of the kind; nor has he ever had urticaria or any skin eruption whatever.

There can be no doubt but that both these symptoms were caused by the absorption or irritation of the tannic or gallic acid applied to the hemorrhoid. None of the other drugs used, such as steel drops, hazeline, chlorate of potassium, etc., caused any symptoms like the

above, nor did the symptoms appear except when the tannic or gallic acid was used, so it can only be concluded that in some peculiar way the gallic acid has had a toxic effect. Both the drugs have been used frequently, by the chemist who made up the ointment and suppositories, for other patients without causing any such symptoms.

Later the patient agreed to an operation, but first of all went South for a change. Three or four days after leaving home and getting to a cooler and more bracing climate, the bleeding stopped, he felt much better, and ate better. In a fortnight the anæmia was gone, and although the piles still remained, yet they were so much improved that he decided not to undergo the operation at present.

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#### THE USE OF COCAINE TO PRODUCE ANÆSTHESIA OF THE SKIN AND TISSUES BENEATH IT.

JACKSON, in the *Medical Record*, contributes an interesting paper on this subject.

From the first use of cocaine as a local anæsthetic the difference between its effects on mucous membrane and on skin was universally recognized. The probable reason for the difference is the greater thickness and horny character of the epidermis, which offers a sufficient obstacle to prevent the rapid absorption of the drug into the sensitive tissues beneath. The magnitude of this obstacle varies with the thickness of the epidermis in different parts of the body, it being greatest on the back and outer sides of the extremities and least on the inner surfaces, and particularly on and near the eyelids.

Probably better local anæsthesia can be obtained in the skin of the lids by the external application of cocaine than in any other part of the body. The application must, however, be sufficiently prolonged to allow of the soaking through of the epidermis by the fluid in which the drug is dissolved. While the various oils have been used to carry cocaine into contact with the tissue to be affected, they are of inferior value, probably because they do not give up the drug with sufficient rapidity to the serum of the tissues, and the watery solution gives better practical results. Its superiority has been very decided.

*Method of applying.*—Dropping the solution upon the surface is quite inefficient. In order to get the soaking of the epidermis necessary for the transmission of the drug, the surface must be kept moist for many minutes. This is readily accomplished by keeping it covered



with a pledget of absorbent cotton which is kept saturated with the solution.

The solution used should be as strong as possible, at least when it comes in contact with the tissue; if, however, the surrounding air is dry and the absorbent cotton is freely exposed to the air, the evaporation will readily bring even the weaker solutions of cocaine up to near the point of saturation.

A most serious obstacle to the necessary soaking of the epidermis is the presence in it of a considerable amount of fat. This may be removed by carefully washing with soap or other alkaline preparations. Yet this very precaution has probably been the cause of complete failure in many of the attempts to produce cocaine anæsthesia of the skin. The presence in the epidermis or upon its surface of any residuum of alkali leads to the precipitation of the alkaloid cocaine from the solution of its salts in a form that is quite insoluble, so that profuse washing of the skin to remove the fat may, by substituting the alkali, render it far more impervious to the anæsthetic than it was originally.

In practice this may be guarded against by the prolonged use of pure water to remove all traces of alkali.

Again, the fat may be removed from the skin by careful washing with ether, and this is the best means if sufficient time is not available for rather prolonged preparatory treatment.

It is probable that the general condition of the lymph-vessels materially influences the amount of the drug taken in through the epidermis. But to balance this, when absorption is most rapid into the skin, the removal of the drug from the point of introduction is also most rapid, so that the effect in anæsthesia obtained is not materially altered by the general condition of the lymphatics.

With the best application and under the most favorable circumstances the anæsthesia obtained by the application of cocaine to the surface is extremely superficial. Simply by such application, continued while the incision is slowly carried down from layer to layer of tissue, the incision can be gradually and painlessly extended to any desired depth. At least this is true of incisions that do not present so great a surface as to cause danger of cocaine-poisoning and are not made through inflamed tissue. But this process is an extremely slow one.

If the incision is to be carried at one stroke below the true skin, even in the thinnest portions the anæsthesia will not be deep enough to render it entirely painless, unless the cocaine

is also introduced hypodermically. To use it hypodermically with the best success, it is essential to bring the drug into direct contact with the tissue to be cut or injured, in the greatest degree of concentration practicable, to get it promptly diffused throughout this tissue, and then to complete the operation before time has elapsed to allow of its being carried off into the general circulation.

The author's method, then, of using cocaine upon the skin is first to prepare the surface, either by washing with ether or with an alkali, followed by prolonged rinsing with pure water; then to keep the surface covered with absorbent cotton saturated with a strong solution of cocaine for ten to twenty minutes. After that, for a rapid operation, to introduce the cocaine hypodermically directly into the tissue to be cut, rapidly secure its sufficient diffusion by massage, and then perform the operation within a very few minutes. Used in this way, cocaine is capable of very greatly lessening or entirely preventing the pain of the removal of tarsal tumors and even of dermoid cysts situated in the region of the lids or orbit. But it is always to be borne in mind that in the presence of hyperæmia and inflammation cocaine has little or no power as an anæsthetic.

#### CAMPHORATED CARBOLIC ACID AS AN ANTISEPTIC AGENT.

Toms contributes to the *Medical Record* a paper with this title, and in the course of it points out that it is very interesting to learn that that eminent surgeon,—“the father of antiseptic surgery,”—Sir Joseph Lister, has recently announced that he has returned to his first love,—carbolic acid. After these many years since his first employment of it for a definite purpose of prophylaxis against the entrance of germs to fresh wounds, and for antiseptic and germicidal purposes,—the birth of the “antiseptic” idea and theory,—after these years of painstaking clinical experiment and bacteriological research, it is at least remarkable that the first antiseptic, used as such, should now hold the first place in the favor of so careful an experimenter and observer as Lister. All those chemical agents which have enjoyed more or less confidence in their efficiency by authorities in surgery as “antiseptics” seem, after thorough testing of their merits, to have been found wanting. To be sure, the “antiseptic” theory has largely been supplanted by “aseptic” principles,—the natural evolution of the primary conception of the author; but there are many surgeons who,

while still having much confidence in carbolic acid, yet find very many and grave objections to its employment in a general way in surgical work, especially in private practice.

Its field of usefulness, although acknowledged by its most ardent employers to be perhaps greater than that of any other permanent and staple compound combining the essential antiseptic properties, would be still greater were it not for toxicity, odor, caustic action, etc. Its employment as a germicide, in strength sufficient to be effective against pyogenic bacteria and their spores, is fraught frequently with considerable danger, and often in an infected wound is not at all possible, excepting by a long and continued use in much reduced strength, in which nature plays the most important rôle, owing to its destructive effects on living tissue. As an antiseptic protective against the entrance of bacteria infecting a sterile wound through the dressings, it is questionable if it does not materially impair the integrity of healthy structures rather than act kindly in promoting the process of repair.

Recently the writer had occasion to resort to other means than the regulation dry dressings with dusting-powders—iodoform, aristol, dermatol, etc.—in treating an extensive ulcerating epithelioma whose surface covered about six hundred square centimetres of the leg. Amputation was out of the question, owing to the debility and age of the patient.

The odor, amounting to stench, the extreme irritability of the wound from exposed nerve-filaments, the deep points of ulceration, extensive absorbing surface, together with the profuse discharge, made up a condition that put his ingenuity to test. After employing "them all," together with antiseptic absorbent dressings, and almost despairing of ameliorating the sufferings of his patient or mitigating the condition in his home, his mind reverted to Lister's first choice and last resort,—carbolic acid,—in the hope that perhaps it could be utilized in some form to meet the indications in so appalling a case. Certainly carbolic acid possessed the ideal properties,—i.e., antiseptic, deodorant, and anæsthetic,—but its offensiveness was only second to that of the wound; besides, it would be required to employ it strong enough to check suppuration, in which strength it would be caustic or certainly irritating, while the extent of surface gave reason to fear possible absorption and development of toxic symptoms from prolonged use of the drug. Remembering a proprietary preparation which aims to be a fifty-five-per-cent. solution of

pure carbolic acid combined with camphor, and is stated by its manufacturers to be non-irritating, the caustic properties of the acid being destroyed, he concluded to try this on the wound of his patient.

Instead of using the proprietary article, he had a pharmacist make a small quantity after the formula of Bufalini, as given in the United States Dispensary, to see in what way it differed from the secret article. He found no difference whatever in appearance, excepting that the full-strength preparation was not irritating to the mucous membranes of the mouth, while the proprietary article was. He also had it made in the fifty-per-cent. combination, which differs only in strength from Bufalini's formula, and this was not found irritating to mucous surfaces. It is stated in the Dispensary that this preparation retains the full antiseptic and germicidal properties of the acid, without its destructive action to living tissue.

In the writer's case he diluted it with fifty per cent. of cotton-seed oil, applying it directly to the ulcer and covering it with sheet-cotton saturated with the same; over this was spread a dry antiseptic absorbing-pad made of powdered charcoal and antiseptic wood-wool, about half an inch thick, spread evenly between cheese-cloth gauze.

For cleansing purposes an irrigating solution was employed, composed of 1 to 1500 bichloride of mercury, combined with 3 to 1000 sulphate of copper, which he has found more effectual than the bichloride alone. After the accumulated secretions are fully washed away, the surface is sprayed with fifteen volumes peroxide of hydrogen, after which the application is made as described. He has been using this now for about three months in this case, with the happiest results,—perfect deodorization of the wound and lessening the formation of pus.

The patient is markedly more comfortable, the irritation has been allayed by the antiseptic and local anæsthetic properties of the remedy, and the extensive breaking down of tissue has been materially checked. Only one dressing is used in twenty-four hours, yet his freedom from pain enables him to comfortably sleep throughout the night, dispensing with the use of morphine, which he had been in the habit of taking, and requiring as a substitute a mixture of bromide, chloral, and hyoscyamus, in very moderate amounts. Moreover, the household are not continually nauseated by the all-pervading odor of the offensive discharges permeating the entire house. He has also employed this valuable antiseptic in recently lacerated wounds, and found in every

case healing promoted under one dressing by primary union.

A nice drain can be made by dipping sterilized candle-wicking into camphorated phenol. It is far superior to all forms of dusting-powders, in the fact that it is not decomposed by contact with the serum-albumin and liberating irritating elements to fresh wound surfaces, as in the case of the iodine derivatives. It keeps the wound moist, is absolutely unirritating,—on the contrary, is anæsthetic,—promoting the process of healing in the most kindly manner, and is the best protection we have against the entrance of bacteria. For this reason it is used to cover coeliotomy and other wounds where union by first intention is so desirable. He also believes it has positive therapeutic properties in dermatology.

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ON THE INTERNAL ADMINISTRATION OF  
CALOMEL IN THE TREATMENT  
OF PSEUDO-MEMBRANOUS  
LARYNGITIS.

KOHN, in the *Medical Record*, highly recommends calomel in the treatment of true croup. He thinks that the remedy, which experience has shown to have the effect on the membrane of liquefying or softening it, is therefore the great desideratum; medicated steam inhalations (lactic acid, lime-water, turpentine) and sublimed calomel (Dillon Brown) have been given with this object in view.

Calomel administered internally, in the manner to be hereafter described, has seemed to have a satisfactory effect, and the results have been so gratifying that this method of treatment seems worthy of the highest commendation.

To a child under two and a half years .05 gramme of pure calomel is given hourly, sleeping and waking; for each year above two and a half years add .02 gramme of calomel to the hourly dose. A child of five years would, therefore, take .01 gramme of calomel every hour. The calomel must be absolutely pure and undeteriorated; it should be given without the admixture of sugar of milk or of any sugar whatever; it may be administered either floating on a teaspoonful of water, or, if the child refuses this because he knows it to be medicine, it may be given in milk, entirely unnoticed by the patient.

The case should be under the watchful care of a trained nurse, who must keep an accurate record, noting the slightest perceptible change in any of the characteristic signs. After one or two grammes of calomel have been given, a change in the laryngeal breathing sound should

be noticed. The treatment should and can be instituted at the earliest possible moment after the diagnosis is made.

The writer has given a child of two and a half years .06 gramme of calomel hourly until 4 grammes were taken; the patient recovered. To another child of three and a half years 5 grammes were given with success. A stimulating and supporting regimen to combat the sepsis was adhered to,—beef soup, white of egg, milk; Tokay wine or whiskey was administered at very frequent intervals.

The administration of nourishment and stimulants half-hourly to sustain the heart power is of the highest importance; everything given the little patient should be palatable and easily taken, as every struggle of the child against taking food or medicine increases the laryngeal stridor and perhaps causes the membrane to extend downward.

The use of mercury in plastic inflammation is one of the traditions of medicine: its praises have been sung by medical writers for more than a hundred years. Whether its so-called antiphlogistic properties are explicable by reason of its destructiveness of germ-life is not known. The action of calomel in croup, given as above described, bears out the old belief in actual experience. Under its use the stridor, the aphonia, the cough, in short, all the symptoms, slowly abate, showing that the membrane is gradually loosening its hold and becoming innocuous.

The advantages of calomel over sublimate are self-evident; the former is mild, non-irritating, can be taken for the necessary length of time without any other effect than a passing diarrhoea, perhaps, while the sublimate is a pronounced irritant poison, which, taken in frequent doses, will cause pronounced gastro-intestinal irritation, necessitating an interruption in the treatment at a critical period.

The powder of calomel of six centigrammes is small, tasteless, and easily administered to the most obstreperous child; not so with the bichloride mixture, when given hourly. If inunctions with blue ointment have been attended by the success claimed for them in diphtheria, then mercury absorbed into the circulation seems to have a controlling influence over the diphtheritic infection and its local manifestations.

For administration to children, calomel must be preferred to all other preparations of mercury, for reasons that are obvious. The danger of salivation is minimal; the writer has never seen a case of pyalism among children treated with calomel.

Severe diarrhoea has also been very rare. Three, four, or even five movements a day under the calomel therapy should be advantageous in this disease, provided the patient take nourishment; the sepsis is, to a certain degree, mitigated by the free action of the bowels.

Should the diarrhoea assume a severe or alarming character, the dose of calomel may be diminished, or the intervals between doses prolonged, or a starch injection, with or without a little paretic, may be given; and if the laryngeal obstruction seems to be lessening, the calomel should not be stopped altogether under any circumstances.

A very strong argument, from a pathological stand-point, in favor of the antiseptic treatment by calomel, or by mercury in any form, is found in the statistics and post-mortem examinations of Prudden and Northrup. In one hundred and fifty-one fatal cases, pneumonia was found in one hundred and four. In Northrup's article in "Keating," in eighty-seven cases, the larynx alone was affected in only one case; in another the membrane extended from the pharynx to the middle of the trachea; between this point and the bronchi of the fourth division nothing was to be found; from these to the finest bronchi, membrane was present; in thirty-four cases the membrane extended from the pharynx down to the finest bronchi. In view of this extensive growth of membrane, of what use can an inhalation be? The tidal air, which alone can carry the inhaled medicament, never reaches the finest bronchi; of what use, therefore, is any local treatment? The treatment by sublimed calomel (Dillon Brown) seems to be that which is advocated in this paper, but in a different form. It formerly was one of the methods of mercurializing a patient to volatilize calomel on a metal plate by means of an alcohol lamp. The treatment has the disadvantage of salivating the attendants of the child.

In mercury we have a drug which, absorbed into the circulation, would seem to have a specific effect on the membranous exudation of laryngeal diphtheria; and, of all its preparations, the mild chloride for administration to children is the best for easily bringing the system rapidly under its influence.

It is not claimed that recovery occurs in every case, nor is the writer in a position to bolster up assertions by statistics; favorable statistics would be accepted with incredulity any way. The simplicity of this method of treatment, ease of application, and the fact that treatment can be instituted the moment laryn-

geal stridor is noticed, in even the youngest child, are arguments in its favor.

Should the patient go from bad to worse, in spite of the treatment, and the symptoms assume a grave character, recourse can always be had to intubation or tracheotomy; and early operation, be it intubation or tracheotomy, Kohn believes should be decidedly discounted.

#### THE TREATMENT OF IMPETIGO.

In an article in *L'Union Médicale*, THIBERGE gives the following prescriptions for this affection:

R Vaseline,  $\mathfrak{z}\text{i}$ ;  
Boric acid, gr. xlv.

Or,

R Vaseline,  $\mathfrak{z}\text{i}$ ;  
Boric acid,  $\mathfrak{z}\text{ss}$ ;  
Oxide of zinc,  $\mathfrak{z}\text{ss}$ ;  
Salicylic acid, gr. vii.

He states that Besnier frequently employs the following ointment with advantage:

R Plaster of Vigo,  
Vaseline, of each, equal parts.

Dubreuilh recommends the following:

R Vaseline and lard, of each, equal parts;  
Oxide of zinc, gr. lxxv;  
Salicylic acid, gr. vii;  
Crystallized acetate of lead, gr. iii.

Vidal recommends the following:

R Simple cerate,  $\mathfrak{z}\text{i}$ ;  
Yellow precipitate, gr. x;  
Oil of cade,  $\text{m}\text{l}$ .

#### THE TREATMENT OF WHOOPING-COUGH WITH QUININE.

After sixteen years' experience in treating whooping-cough with all the usual remedies, DR. P. BARON writes (*Berliner Klinische Wochenschrift*, No. 48), warmly commending the use of quinine. He has used it in about fifty cases. Usually several days elapse before the improvement is marked, in part, no doubt, because much of the medicine is lost through vomiting. Sometimes its good effect is observed in two or three days. When once begun, the improvement makes rapid strides in decreasing the number and the severity of the attacks, even if the dose is diminished and given less frequently. He thinks a cure may be obtained, on an average, in six weeks. No relapse has ever come under his observation in

children cured of whooping-cough by the use of quinine.

But while unsurpassed for ordinary whooping-cough, the value of quinine is best appreciated when used for cases where acute affections of the lungs occur. Whether as an antipyretic or as a specific could not be determined, but its action was excellent. In one case, after but a few days' use of quinine, the relatives reported, beaming with joy, that the child, which was suffering with acute disease of the lung, demanded food and played, and that the fever had disappeared.

He cured three very severe cases with it. One was a delicate seven-year-old girl, sent from the city by the physician as a very last resort, hoping the change of air would benefit the whooping-cough. The child was daily growing worse. When Baron saw it, on June 18, there was a disseminated pneumonia, so severe that, in spite of his great faith in quinine, he felt no hope of its recovery. The child could not be prevailed upon to take the least nourishment, and the coughing prevented any sleep. As he believed quinine the only remedy, he tried to give the child three capsules, and was finally successful. At his next visit, on June 23, the child was sitting up in bed, and, although there were still dull places in the lungs, it was nearly free from fever, had some appetite, and was able to sleep some. The improvement continued from day to day, and no other remedy was required besides the quinine.

Another child was in a wretched, poor home, and had barely recovered from a long attack of inflammation of the lungs a year before. The whooping-cough was soon complicated with inflammation of the lungs. As soon as Baron gave the quinine the child improved, and, in spite of all the drawbacks, was well in three weeks' time.

Another child, three years old, had pneumonia with the whooping-cough, and was so reduced that both hands and feet had swollen. The action of the quinine was not so immediate here, but in three weeks the child was well.

No bad result from the quinine was ever noted. He thinks it should be determined whether it could be used as a prophylactic. The single dose is  $\frac{1}{6}$  grain of the hydrochlorate for each month, and  $1\frac{1}{2}$  grains for each year, of the child's age, given three times a day, preferably at 6 A.M. and at 2 and 10 P.M. Strong children require a larger dose, but a larger dose than  $6\frac{1}{2}$  grains to children over four years is generally not required.

#### USE OF HYDROGEN PEROXIDE IN THE PERITONEAL CAVITY.

In a very brief communication to the *New York Medical Record*, W. H. WIGGIN states that he has employed peroxide of hydrogen in full medicinal strength in cases in which, by accident or disease, pus has obtained entrance into the peritoneal cavity. He believes that this method is entirely without danger, and promises another communication upon the subject when his experience is larger.

#### A NEW AND RAPID METHOD OF ANÆSTHESIA.

DR. MAGILL, of Chicago, reports the following method of producing anæsthesia to the *Medical Record*:

The method was devised and developed, during the summer and fall of 1892, by Dr. Bourbon, anæsthetist of Hôpital Bichat, Dr. Hartman, acting surgeon, and Magill, and, since its introduction, is the preferred method in the surgical service of Professor Terrier, at Hôpital Bichat. The *modus operandi* cannot better be described briefly than is done by Professor Terrier in his communication on the subject to the Société de Chirurgie of Paris, October 19, 1892:

"The bromide of ethyl should be given in large doses. After pouring it abundantly [about 3 grammes] upon a folded towel, it is placed over the nose and mouth of the patient, who is told to breathe deeply. Generally at the second or third inhalation a slight agitation appears, but at the fifth or sixth the anæsthesia is complete, with total loss of consciousness. With the continuance of this anæsthetic, in a moment, sometimes preceded by tonic contracture, the complete muscular resolution is accomplished, with congested face and dilated pupil. At this moment the towel saturated with ethyl bromide is rejected, and another upon which chloroform is poured is substituted in its place, without allowing any interruption of anæsthesia in changing. The first dose of chloroform only should be fairly strong [1 gramme]. At this moment the operation may be commenced [about three-quarters to one minute since the commencement of the anæsthesia]. The facial congestion diminishes little by little, the pupillary dilatation gives place to retraction; in a word, the transition from the anæsthesia of the bromide to that of chloroform is accomplished without the slightest interruption of the sleep. From this moment the continuance of the anæsthesia is done in the ordinary way [chloroform in small and

regular doses]. The difference is simply that the complete anæsthesia is immediate, instead of resultant of a period often long, which is necessary in the process of chloroform anæsthesia." [And more so in case of employment of ether.]

The matter in brackets is not a part of Professor Terrier's communication, but inserted as explanatory.

It will be seen that the duration of the anæsthesia may be prolonged at the will of the operator. Experience has demonstrated that by this process a remarkably small quantity of anæsthetic agents suffices for complete and protracted unconsciousness, and that by reason of the smallness of the quantity used, the awakening of the patient almost immediately follows the cessation of administering chloroform.

The writer has performed a complete anæsthesia for ovariectomy by Professor Terrier with the administration of 3 grammes of ethyl bromide and 12 grammes of chloroform, recovery from sleep immediate, and no subnausea. Duration of the complete anæsthesia thirty-two minutes.

This is only one of many similar cases which will be found in the publication of the clinical studies. How many anæsthetists are there who can obtain a complete resolution of a vigorous subject with 12 grammes of chloroform only?

The advantages claimed for this method are,—

1. Rapidity, a complete anæsthesia, which allows the commencement of the operation in one minute's time after the first inhalation of the anæsthetic.

2. Doing away with all violent agitation on the part of the patient, so common when chloroform or ether alone is used.

3. On account of the dissimilar physiological action of the two anæsthetics employed, the dangers attributed to the use of chloroform alone are in a great measure eliminated by the counteraction of the ethyl bromide previously administered.

4. An almost entire absence of post-operative nausea.

In February of this year this method was introduced in the service of Dr. Segond, at the Maison de Santé, the City Hospital of Paris, by Dr. Malherbe, and immediately adopted by Dr. Segond for all of his work, to the exclusion of other methods. It was the writer's privilege to introduce this method in the service of Dr. Monod, at Hôpital St. Antoine, in April of this year, which led to its adoption as the current method throughout his wards. Dr. Riche-

lot, of Hôpital St. Louis, has spoken with considerable favor of this process of anæsthesia in the discussion at the Société de Chirurgie, and employs it in his service in preference to all others in cases where affections of the heart cause any apprehension from the use of chloroform alone.

The patients who have been subjected to this method of anæsthesia have pronounced in its favor, and in cases of an anæsthesia to be repeated for them have asked for this method.

In a short time a monograph on the subject, with complete bibliography, chemical and physiological aspects, and several hundred detailed clinical studies of its application, will be published in Paris as a complete history and introduction of the subject. There appears to be no element of danger in the combined employment of these two agents for a complete anæsthesia, and the simplicity of its application will be evident on trial.

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#### NOTE ON THE EMPLOYMENT OF CALCIUM CHLORIDE AS A HÆMOSTATIC.

SAUNDBY, in the *Birmingham Medical Review*, contributes a short note upon this subject, basing his experience upon the experimental report of Professor Wright. The three following cases are therefore of interest:

The first of these was a middle-aged woman, with chronic jaundice of six months' duration, believed to be due to an impacted gall-stone. She suffered from pretty free hemorrhage from the rectum, apparently proceeding from some internal piles, but the bleeding was decidedly more than we should have expected from the state of the bowel. Our first efforts were directed to remove the hard fæces which could be felt in the rectum by the use of olive-oil injections, and to keep up a daily action of the bowels by the administration of saline aperients; but as after fifteen days these means failed to check the bleeding, calcium chloride in small doses was administered every four hours, with the satisfactory result that after five days the hemorrhage ceased and did not return.

The next case was even more striking, as it was that of an elderly woman, admitted with purpura hemorrhagica,—that is to say, she had a purpuric rash over the body and limbs, free bleeding from the gums, and slight hæmaturia. The free use of ergot, gallic acid, and acid infusion of roses not having been followed by any benefit, on the third day after admission she was placed upon small doses of calcium chloride every two hours, after which the bleeding di-

minated, and five days later had ceased altogether, the patient making a good recovery.

In the third case, which was one of phthisical hæmoptysis, calcium chloride was used in combination with other measures, but, in spite of all treatment, a profuse hemorrhage set in which carried off the patient. At the autopsy we found an aneurism of the pulmonary artery projecting into a cavity, a condition which sufficiently explained the futility of our remedies.

With respect to dose, it is noteworthy that Professor Wright found, after giving 1 gramme thrice daily for four days, that the coagulability became enormously diminished,—i.e., to over one hour,—and on certain experiments upon himself he believes this was due to the administration of calcium chloride having been carried too far, for he found that when too large a dose of the salt was added to decalcified blood *in vitro*, coagulability decreased, and on taking 2 grammes of calcium chloride three times a day the coagulability of his blood rose during the first twenty-four hours, returned to normal during the second, and in the third fell below normal, so that the best results may be looked for from comparatively small doses. In the author's cases the drug was administered in the form of the liquor calcii chloridi of the new British Pharmacopœia, which is of the strength of 1 to 5, and the dose employed never exceeded 30 minims, or 6 grains, though in the case of purpura this quantity was given every two hours during the day for some days.

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NOTE ON THE TREATMENT OF WARTS  
BY THE INTERNAL ADMINISTRATION OF ARSENIC.

SYMPSON contributes an article on this subject in the *Quarterly Medical Journal*.

Though warts sometimes disappear spontaneously without any treatment whatever, and although the treatment of them by various kinds of outward applications is often perfectly successful, yet quite enough cases are found apparently intractable by ordinary methods to justify a short note on the use of a drug which seems specially adapted to cure this tiresome and vexatious complaint.

First a word or two as to local remedies. The writer has tried on different patients, and occasionally the same patients, nearly all the drugs usually recommended for the abolition of warts. Such are glacial acetic acid, salicylic colloid, fuming nitric acid, carbolic acid, liquor potassæ, and argenti nitras. The first two named in this list seemed to act best, and

the salicylic colloid he prefers of the two, as most easily applied by any unskilled person and least irritating to the patient.

But for the last few years, acting on a suggestion in an American medical journal, and on account of Mr. Pullen's paper (*Practitioner*, 1888, vol. i. p. 207), in every case of warts which did not show some sign of yielding to these applications in ten days or a fortnight, he prescribed small doses of arsenic internally. Of its rapid action on the warts there can be no doubt whatever. He has repeatedly tried it by itself, and by the end of a fortnight even a large crop of warts will have disappeared. An advantage also of its use alone is that by children (who are, of course, the chief sufferers from warts) any kind of caustic or painful application is much dreaded; also very little arsenic need be given. The drug need not always be given as long as a fortnight, for a week's treatment by small doses twice a day seems to set up a healthy action in the warts, which is continued after the medicine has been left off. The combined treatment, though, of arsenic internally, with salicylic colloid painted daily on the warts, is quicker than that by arsenic alone. The author gives 1, 2, or 3 minims either of the liquor arsenicalis or liq. arsenici hydrochlor. twice or three times a day, according to the age of the child, and has never found it needful to exceed the largest dose. He has never found any symptoms of its disagreeing with the patients.

Its action on the warty growth is no doubt due to the increased metabolism of the skin, leading to these hypertrophied portions being killed and exfoliated.

It is somewhat curious to note that arsenic has been accused of producing warts.

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A SHORT CRITICAL ANALYSIS OF TWENTY-SEVEN CASES OF TETANUS TREATED WITH SERUM OR TETANUS ANTI-TOXIN.

BEHRING and KITASATO (*Deutsche Med. Wochenschrift*, 1893, pp. 152-154), through the most brilliant researches, have shown us by what therapeutic measures we may hope to overcome the most deadly of infective diseases. Tizzoni and Cattani, in Italy, and Roux and Vaillard, in France, followed closely in their footsteps. Of all microbic diseases, the most hopeless to treat or prevent was tetanus. Animal experiments, however, have shown that by means of injections of serum obtained from immunized animals it is possible not only to protect animals against tetanus, but also to

cure those which already suffer. Those experiments were soon applied to man, especially in Italy, and a small number of cases is already on record. It may not be out of place in the present journal to put these cases together and see what lessons have been learnt from them. We may say at once that though it will be found that so far the treatment has been of little benefit in really serious cases, that, nevertheless, the serum treatment is at present the only rational treatment to be employed. Our English laboratories, unfortunately, cannot supply the precious substance. Roux and Vaillard, however, are always ready, with the courtesy characteristic of the Institute Pasteur, to supply hospitals with the serum; and, so long as the latter is not procurable in our country, we advise surgeons to apply at the institute, so that they may have the serum ready in an emergency, instead of losing time when they are brought face to face with a case.

Eleven cases have been treated by antitoxin obtained from Tizzoni and Cattani, of Bologna, and none of these have ended fatally, and on the strength of this result the Italian school considers the curative action of the serum as proved. The antitoxin is practically nothing but serum; it consists of the alcohol precipitate of immunizing serum, and we shall not draw any distinction between serum and antitoxin, especially since latterly Tizzoni has used both the serum and antitoxin in the same cases. On looking into the Italian cases we find, however, that they were all of a mild type, as pointed out by Rotter and Roux and Vaillard. The last case, published recently in the *Centralblatt für Bact.*, at first sight is more acute or malignant, but on closer inspection one may really doubt whether it was the serum and antitoxin which cured. The temperature in this case was never raised, and after the first injections the symptoms did not abate. Taking them altogether, we must confess that these eleven cases were more or less benign, and here the antitoxin treatment did good. In most cases, with three exceptions, the incubation period extended over ten or more days, and in almost all of them the treatment was not begun until two or three weeks after the primary injury; and though a cure resulted in some cases after a few days, in most cases this did not take place until six to twelve days after the first injection. A case such as this, for instance, is quoted as a successful one by Finotti. The disease began twenty-four days after the injury; injections were begun five days later, and continued until the forty-second day. The

severest case so far treated by Tizzoni, as we mentioned just now, is the eleventh, where tetanic symptoms appeared on the sixth day, and treatment was commenced almost immediately and carried on for five days, when the patient was practically out of danger, though the tetanic seizures did not entirely disappear until the sixteenth day after the injury. We do not wish to detract from the merits of these cases, all the less as we are advocates of the new treatment, but it is our duty to weigh all points and not to raise false hopes. These eleven cases cannot prove much either for or against the usefulness of the antitoxic serum as a curative agent. How true this is will become clear if our readers be reminded that it seems that only the successful cases have been published by the Italians. We can hardly understand such a secrecy and misapplied reticence in this country. Rotter mentions three fatal cases of which he has heard, and Albertoni, as well as Roux and Vaillard, refer to the culpable suppression of fatal cases treated by Tizzoni's method.

If we now glance over the cases of tetanus treated by serum obtained from Behring, we find, again, that in acute or severe cases the result has hardly been satisfactory. We have succeeded in collecting six cases. Of these, four survived, but none of them were really severe. Rotter, for instance, who relates one case, never feared for his. Moritz's case was serious, but chronic, and the other two were unquestionably mild. Of the two fatal ones, we must, in all fairness, exclude the case treated by Baginsky and Kitasato, since here only a very small dose of serum was administered, and in the other fatal case it seems that the serum was not so strong as might have been wished. Any way, it will be seen that from these six cases a just conclusion as to the efficiency of the curative serum in tetanus, as we are likely to meet it in hospital practice, cannot be drawn. We realize this still more on studying the cases published by Renon and Roux and Vaillard. Renon's two cases both ended fatally. They were treated with rabbit's serum, but we find no data as to the efficacy of the serum, etc. Of these, we must again exclude one,—a successful one,—since here the tetanic seizures ceased after the amputation of the injured finger, and, besides, the quantity of serum injected was so small that we can hardly believe that it had any effect on the course of the disease. They relate two other successful cases, but say themselves that "à aucun moment ces deux malades n'ont donné de sérieuses inquiétudes." On the other hand, five acute and



severe cases, treated as early as possible with large quantities of very active serum, were not benefited in the slightest degree.

Taking all the twenty-seven cases, then, without critical analysis, we find that of twenty-seven cases to which serum was given, nine died. To these we ought to add at least three, if not more, which have been suppressed, so that of thirty cases, twelve were fatal. Now, what is the percentage of deaths in cases of tetanus treated on ordinary hospital principles? Behring would make us believe that eighty to ninety per cent. of all cases are fatal, while Albertoni's figure is twenty-four, Sormanni estimating it at forty-four. According to Roux and Vaillard, fifty most likely represents the correct percentage in our modern antiseptic days, and if this be so, we find that the thirty cases treated with serum have not been accompanied by sufficient success to warrant us in giving a favorable prognosis in those cases which have been treated with antitoxin serum. But are we, therefore, to give up this method of treatment? By no means. We must confess, with Roux and Vaillard, that in the rapid form of tetanus the serum treatment has been powerless, and has not in the slightest degree modified the course of the disease. But in practice we cannot choose either case or opportunity, and our remedies must be employed under the conditions as they exist. However, all cases, successful or fatal, should be published, so that we may learn what we are entitled to expect from the antitoxic treatment. At present it seems that in severe and rapid cases of tetanus the prognosis is as bad as ever, and Roux and Vaillard found that this is true also for tetanus artificially produced in animals, for they say that in animals "le traitement a échoué dans les tetanos graves." It may be that we require more active serum than it has so far been possible to obtain. The French authors give what seems to us to be sound advice,—viz., to use the serum as a preventive measure in contused and dirty wounds, either in hospital practice or on the battle-field, and in such cases where there is a possibility of tetanus setting in. Tetanus is a rare disease, but many who are seized by it are doomed to die a miserable death. A small dose will suffice to prevent, while a cure may be impossible with large doses. Why, therefore, not attempt prevention, especially when it is so easy to procure the serum in a suitable form from the Institut Pasteur? We again urge on all hospitals the necessity of providing for themselves a suitable quantity of the antitoxic serum, and we only regret that there should be no laboratory

in England capable of supplying what our brethren across the silver streak liberally offer us.—*Medical Chronicle*, vol. xix., No. 1.

#### ESERINE IN THE LOCAL THERAPEUTICS OF IRITIS.

HANSELL (*Philadelphia Polyclinic*, January 20, 1894) calls attention to the occasional danger of prolonging the use of atropine in cases of iritis, especially of such variety where there has been abundant exudation, and recommends a solution of eserine strong enough to break off the capsular attachments, but weak enough to avoid undue excitement of the ciliary structures. He has found disks each containing 1000 grain convenient. The effects of the drug must be carefully watched, for if it is too strong, or too frequently repeated, a relapse of the iritis may be expected.

#### A MODIFIED OPERATION FOR EXTRACTION OF CATARACT.

T. E'GAPPA (*Indian Medical Gazette*, December, 1893) lacerates the capsule of the lens as the first step in the operation for extraction of cataract. He believes the best part of the cornea at which to insert the needle is from two to three millimetres above and to the inner side of the outer extremity of the horizontal diameters of the cornea. The pupil is fully dilated and the incision is a crucial one. The lens is then extracted through an ordinary corneal incision, and usually without iridectomy.

#### THE ACTION OF CARBONIC OXIDE ON THE EYE.

M. SCHMITZ (abstract of original paper published in the *Annales d'Oculistique*, November, 1893) observed ocular disturbances in two cases of severe poisoning by carbonic oxide. The first patient was unconscious for twenty-four hours, and paralyzed in his limbs for three days. On the fourth day vision equalled one-sixth; there was intense photophobia, and later the field of vision was contracted; all colors were distinguished at the fixation point. Gradually the symptoms improved until the end of the fifth month, when they were normal. Ophthalmoscopically the veins were distended and the arteries contracted. After the accident there was anæsthesia in both hands and both forearms. In the second case there was also concentric contraction of the visual fields and diminution of central acuity, but the symptoms varied considerably at different examinations. There was also anæsthesia of various portions

of the skin of the body. The author believes that in both cases he dealt with a form of toxic hysteria.

*THE EMPLOYMENT OF INJECTIONS OF  
ORGANIC EXTRACTS IN THE TREAT-  
MENT OF DIFFERENT FORMS  
OF ATROPHY OF THE  
OPTIC NERVE.*

BOURGON (*Annales d'Oculistique*, November, 1893), after referring to the article of Galtier on the treatment of gray atrophy of the optic nerve by the injection of organic extracts, in which he had apparently seen a good result, details four observations of his own,—the first, a case of white atrophy, probably of intracranial origin; the second, one of atrophy in a tabetic patient; the third, also intracranial in origin; and the fourth, of uncertain origin, perhaps diabetic. The interesting point of the report is that, although one of the patients was undoubtedly tabetic, and the doses of the liquid employed were very considerable, the results were absolutely negative, and, therefore, he doubts any efficacy in the Brown-Sequard method in so far as optic atrophy is concerned. He mentions, in passing, that he has had better results in two cases by the use of antipyrin, as recommended by Valude, than by any other medicament.

*CLINICAL RESEARCHES ON PARALYSIS  
OF THE OCULAR MUSCLES, AND  
THEIR TREATMENT.*

DR. J. D. MELLO VIANNA (Paris Thesis, 1893) has published a brochure on this subject, and the following abstract of the chapter on treatment appears in the *Archives d'Ophthalmologie*, November, 1893:

When syphilis has been established, or is only suspected, and even where the etiology is uncertain, the treatment should begin with mercury, preferably the hypodermic method, which may be safely employed if rigorous antisepsis is practised. The formula of Professor Panas follows:

R Biniiodide of mercury, .40 centigramme;  
\* Sterilized water, 100 grammes.

The injections should be made with a carefully sterilized Pravaz syringe, and the area selected for puncture should also be properly disinfected. The injections should be intramuscular, and the needle made to penetrate some depth into the tissues. The region of the buttock is preferred.

The formula of De Wecker is also given as follows:

R Corrosive sublimate, 1 gramme;  
Chloride of sodium, 2 grammes;  
Acetate of morphine, .40 centigrammes;  
Distilled water, 100 grammes.

A Pravaz syringe contains about 1 centigramme of sublimate. The dose is one injection per day.

*TENOTOMY OF THE OCULAR MUSCLES.*

An editorial in the *Medical News*, after referring to the fact that in the Ophthalmic Section of the Pan-American Medical Congress there was a manifest inclination, with a few exceptions, towards a more conservative and therefore medical treatment of heterophoria, proceeds as follows:

It is also fast coming to recognition that, owing to the very peculiar and complex interrelations and functions of the ocular muscles, as well as from a hundred other reasons, these muscle-troubles, supposed and so-called, are often not muscle-troubles at all; they are not always peripheral in origin or in essence, but are often of central origin. The malfunction resides in the innervation and the innervating centres. For example, upon a patient with eighteen degrees of esophoria, complete tenotomies of both internal creti have produced temporary muscle-balance, but in ten days the eighteen degrees reappeared, and the man stood just where he was before the operation.

In the first place, many of these inco-ordinations are due to general disease, such as anæmia, tabes, pelvic disorder, syphilis, etc., and require proper general treatment to re-establish healthful normality of function. One of the speakers of the Congress detailed a number of cases that had come under his observation, in which operations on the muscles had been worse than useless, because the paresis was plainly due to cord-disease.

Then, again, a large number of these inco-ordinations are due to the uncorrected ametropia. The tenotomist, despite himself and despite his remonstrance, ignores the fact or depreciates its importance, that the refractive error produces muscular defect, and the correction of the ametropia either relieves the reflex symptoms or cures the muscular unbalance. It is perfectly possible, nay, it is highly probable, that hyperopia and hyperopic astigmatism may be the chief etiological factors in the production of *both* esophoria and exophoria. A single cause may produce diametrically opposite results, according to its strength and according to the circumstances and conditions among which it operates.

Finally, in a large balance of cases not due to general disease, or to ametropia, it is certain that gymnastic exercises may re-establish the desired muscular equilibrium. All success by this method depends upon the kind of exercise and how it is carried out. In the case of other paretic muscles,—supposing, for argument's sake, that the muscles are primarily at fault,—we do not cut them, but we endeavor to stimulate them to healthy action and development by gymnastics, by hygienic and physiological measures. Why not also do the same with the muscles of the eye?

There is a proper place for tenotomy for insufficiency, but it should be resorted to only after the foregoing methods have been tried.

#### ON CERTAIN DANGERS ATTENDING THE USE OF ATROPINE AND THE EMPLOYMENT OF SCOPOLAMIN.

DR. HASKETT DERBY (*Boston Medical and Surgical Journal*, December 28, 1893), after calling attention to the well-known dangers of atropine and its power to precipitate an attack of glaucoma, as well as produce severe constitutional disturbances, refers to scopolamin originally introduced by Raehlmann. He quotes some observations with this drug made by Dr. Haskell of the Massachusetts Charitable Eye and Ear Infirmary, a one-fifth-per-cent. solution of the drug having been used in seven cases. The first column gives the age, the second the number of minutes that elapsed before any effect was perceptible, the third the minutes required for maximum dilatation, and the last the number of hours that elapsed before the pupil again became normal.

9	8	40	51
8	16	35	60
17	10	21	72
12	9	30	80
9	10	25	60
20	10	20	80
12	12	40	90

Raehlmann's conclusions, already abstracted in the columns of the *GAZETTE*, are quoted, and Derby thinks that if further experience corroborates them, it is likely that scopolamin may supersede atropine.

#### THE EYE TREATMENT OF EPILEPTICS.

DR. AMBROSE L. RANNEY, (*New York Medical Journal*, January 20, 1894), comes to the following conclusions as the result of his observations on the eyes of epileptics:

1. In epilepsy he regards an examination of the eyes (for errors of refraction) and of the eye muscles (for heterophoria) as the first and perhaps the most important step towards a search for sources of reflex nervous disturbance.

2. No final conclusion should be reached regarding the presence or absence of heterophoria until sufficient time, patience, and skill have been bestowed upon the investigation by one who is thoroughly familiar with the practices and later methods for the determination of "latent" heterophoria.

3. All preparations of bromides and other drugs that tend to control the seizures should be withheld, as a rule, from an epileptic patient until all possible sources of reflex irritation have been scientifically sought for and, as far as possible, relieved.

There may be justifiable reasons, to his mind, for exceptional departures from this rule; but he wishes to emphatically raise his voice in protest against the prevalent system of drug-ging epileptic patients from the date of the appearance of the first fit without any attempts being made to ascertain what the cause of the epilepsy may be.

4. He strongly advocates the employment of atropine in every case before a final decision is reached regarding the refraction of an eye.

He also believes that in epileptic cases it is wise to insure a full correction of any existing astigmatism (by glasses to be worn constantly in well-fitted spectacle-frames), and as near a full correction by spherical glasses of any latent hypermetropia that is detected as the patient can be made to tolerate, even if atropine has to be instilled at intervals into the eyes of the patients for several weeks to prevent a return of ciliary spasm.

He has observed many cases of chronic epilepsy that have been relieved of all convulsive seizures so long as the full effect of atropine upon the ciliary muscle was maintained.

5. No promises that absolute cure can be effected by eye treatment should ever be made to an epileptic; but it is usually safe for the physician and patient to hope that a radical correction of marked heterophoria and abnormal refraction will eventually be followed by decided and permanent benefits.

6. The results in all cases thus far treated by him seem to warrant the conclusion that at least ninety per cent. of chronic epileptics have been better without bromides, after a satisfactory correction of their eye defects, than they ever were when subjected to the influence of drugs. Some have apparently been cured.

It should be remembered that a victim to

chronic epilepsy who is rendered by any treatment as free from the attacks without the bromides as when under their deleterious influence has been very markedly benefited; again, that if a marked diminution of the attacks has been effected, the patient has double cause for gratitude; finally, that if the attacks are arrested *in toto* without drugs, it is to-day one of the most remarkable facts recorded in medical literature.

7. In cases where negative results have been observed in spite of a satisfactory investigation and correction of marked heterophoria and abnormalities of refraction, he would deem it wise before resorting to drugs for epileptic seizures to search for other sources of reflex peripheral irritation (such, for example, as bad teeth, phimosis, rectal or uterine disease, scars, etc.).

Furthermore, the detection of chronic kidney disease, syphilis, organic brain lesions, and depression of the skull is most important prior to the beginning of eye treatment or a search for other forms of peripheral reflex disturbances.

8. The treatment of heterophoria by prismatic glasses alone is not curative; nor, in his opinion, are very marked beneficial results to be expected from them. Prismatic glasses are valuable aids, however, in determining the existence and amount of "latent" heterophoria prior to the radical correction of such defects by graduated tenotomies.

#### THE TREATMENT OF ULCERS OF THE CORNEA BY CURETTING ("RACLAGE") AND ANTISEPTICS.

FROMAGET (*Annales d'Oculistique*, October, 1893), communicated a paper on this subject to the Society of Ophthalmology of Bordeaux, and comes to the following conclusions:

Raclage, with antiseptic irrigation and dressing, is indicated,—

1. In persistent phlyctenular or traumatic ulcers which, accompanied by intense reactionary symptoms, have no tendency to heal or induce infection.

2. In asthenic ulcers.

3. In infectious ulcers of small volume.

It is useless and consequently not indicated:

1. In recent and superficial ulcers when there is no infection.

2. In ulcers of granular conjunctivitis.

3. In infectious ulcers of large volume with infiltration of the cornea.

It is necessary to combine paracentesis of the cornea with raclage in the following cases:

1. Increased depth of the anterior chamber and rise of the intraocular tension.
2. Danger of perforation.
3. Existence of obstinate hypopyon.

#### ON THE ACTION OF ELECTROLYSIS UPON THE DEVELOPMENT OF STAPHYLOCOCCUS AND STREPTOCOCCUS.

VALUDE (*Annales d'Oculistique*, October, 1893) makes the following abstract of an article with the above title published by Lagrange. Inasmuch as electrolysis is used to cure dacryocystitis, it was sought to determine the influence of this electrical action on the micro-organisms which multiply in the lachrymal ducts and are the first cause of dacryocystitis. The experiences of Lagrange have shown him that electrolysis possesses a definite microbicidal action. If the micro-organisms are not absolutely destroyed, their virulence is greatly lessened. The author thinks that the bactericidal action is due to the chemical electrolytic decomposition and to the direct influences of the gases thus produced upon the micro-organisms. It is known, indeed, that electrolysis of the lachrymal ducts is accompanied by the production of an abundant foam. The gases thus developed act powerfully upon the vitality of pathogenic agents.

#### THE TREATMENT OF EPIPHORA.

VALUDE (*Annales d'Oculistique*, October, 1893) submits the following abstract of a paper published by Bettremieux (*Journal d'Oculistique du Nord*, February, 1893): In stubborn epiphora, instead of attacking the principal or accessory lachrymal glands, as is now usually done, Bettremieux performs galvano-cauterization of the excretory ducts of the lachrymal glands at their openings into the conjunctival cul-de-sac, so that the former become obliterated and the epiphora ceases. This is his method of procedure: After cocaine-ization, the superior eyelid being quite reversed, the patient looking downward and inward, he performs a number of superficial puncture cauterizations on the surface of the palpebral lachrymal gland situated in the external part of the upper cul-de-sac of the conjunctiva. The patient feels no pain at the time of cauterization, and later suffers very little or not at all. Sometimes a slight localized conjunctival injection is produced, with scarcely ever any swelling. These cauterizations should be made repeatedly at intervals of several days. According to the author, the cicatricial pro-

cesses which are thus induced ought to cause obstruction or, at the very least, contraction of a certain number of excretory ducts of the lachrymal gland. Although it is not possible to touch with the point of the platinum needle repeatedly and unerringly upon the openings of these canals, it is reasonable to admit that the cauterization of the portion of the cul-de-sac corresponding to the seat of the excretory duct ought to be an obstacle to the flow of the lachrymal fluid, and to determine secondarily a certain atrophy of the gland as may in reality be produced after accidental cauterization, or in consequence of the cicatricial lesions which follow certain types of granular or diphtheritic conjunctivitis.

#### A NEW TREATMENT OF GLAUCOMA.

KNISS (*Annales d'Oculistique*, August, 1893) succeeded in checking glaucomatous accidents by making a circular incision in the cornea and including the iris in it. This irido-sclerotomy proves useful, especially in severe forms of glaucoma. Hernia of the iris, always to be dreaded in ordinary sclerotomy, is thus avoided. This operation may be recommended in all cases where iridectomy would have been deemed necessary.

#### THE ABUSES OF COCAINE IN NASAL TREATMENT.

A good note of warning and sharp criticism was read on this subject by WILKINSON, of Omaha, at the Milwaukee meeting of the American Medical Association, and is published in the *Journal* of November 25. His strictures are too largely directed to the employment of the drug in various proprietary "catarrh snuffs," and might well have been extended to its medical employment. The numerous, and already sometimes disastrous, cases of the formation of the cocaine habit which had fallen under his notice prompted him to his suggestion that medical men should unite to combat promptly and vigorously this growing evil, and to secure legislative bars to the vending of such preparations. His protest might have been applied with nearly equal force to the undue use, and still more to the prescribing, of cocaine by the profession. It has from the first been a matter of real surprise that a drug of such potency had not more of deleterious effect; but he who has used it much and seen no bad results speaks ill for his observation. Close and conscientious observers have almost always learned to be increasingly cautious in their own use of it, and have often wholly forsworn

giving it into the hands of a patient. Its great value in the investigation and treatment of nasal troubles will always make it tempting to resort to its use more often than is best, and it is well that those who are continually seeing its dangers and actual damage should insist upon an employment of it as limited and cautious as is or ought to be the rule as to morphine.

#### COCAINE-POISONING: REPORT OF A CASE WITH ALARMING SYMPTOMS.

DR. ALBERT R. BAKER (*American Journal of Ophthalmology*, November, 1893) reports a case of operation upon the nasal duct under the influence of cocaine, with the symptoms which follow: Preparatory to slitting the canaliculus, he instilled into the eyes two drops of a six-per-cent. solution of cocaine, which he had used the morning of the same day without accident upon a boy about twelve years of age. After waiting two or three minutes, the canaliculus was slit and three drops injected into the lachrymal sac. He then attempted to pass a lachrymal probe, but as the patient still complained of pain, three more drops were injected, making eight in all. Almost instantly the patient complained of feeling queer and commenced to talk incoherently, soon becoming unconscious, and developing clonic convulsions of all the extremities. Respiration was frequent and sighing. The face was flushed, the pulse accelerated, irregular, varying from 120 to 50 a minute, but at no time very weak. The convulsions lasted for over two hours. Inhalations of ammonia, and later on of nitrite of amyl, were tried without apparent benefit. A hypodermic injection of brandy was also given. As the patient emerged from the unconscious condition she became slightly delirious, requiring the constant services of two or three attendants to prevent injury to herself or to others. Her mind was filled with the most extravagant hallucinations, in many respects resembling those produced with *duboisia* or *cannabis indica*. At one time she would see many objects on the floor; at another be sewing, and then she would imagine bodily harm, all the time talking and gesticulating as vehemently as in acute mania. These symptoms continued for about six or eight hours, and were so persistent and violent that he did not feel justified in removing her from the office before ten o'clock in the evening. She slept but little during the night, but was recovered in the morning. As soon as she could swallow, aromatic spirits of ammonia were given, and strong coffee

inhalations of ether were tried sparingly to control the violent maniacal symptoms. It is possible, in Dr. Baker's estimation, that more heroic use of these remedies, or a hypodermic injection of morphine might have allayed the very embarrassing symptoms. One of the most persistent hallucinations of this patient was that she was being delayed for improper purposes, although no definite erotic symptoms were evident, such as have been reported by Richardson in one case. Dr. Baker's paper concludes with a partial analysis of cases of cocaine-poisoning, and particularly those which have resulted in death.

#### THE TREATMENT OF PURULENT (GONOCOCCAL) CONJUNCTIVITIS.

BURCHARDT (*Centralbl. f. Prakt. Augenheilk.*, November, 1893) does not believe in the use of cold compresses and cauterization of the mucous membrane with strong solutions of nitrate of silver, but advocates the frequent irrigation (sterilization) of the conjunctival cul-de-sac. For this purpose he uses a one-sixth-per-cent. or one-tenth-per-cent. solution of nitrate of silver. If there is much pus, he first irrigates with a five-per-cent. solution of aqua chlorinata, and follows this with the nitrate of silver.

#### SINGLE-SUTURE OPERATION FOR ADVANCING THE RECTUS.

DR. A. E. PRINCE (*Archives of Ophthalmology*, October, 1893), after referring to his well-known paper on double-suture operation for advancing the rectus muscle, together with the single-suture method for accomplishing the same purpose, describes the latter operation a second time and more completely. The following indications must be fulfilled:

1. Secure an unyielding anterior fixation point in line with the muscle to be advanced by utilizing the dense episcleral tissue.

2. Secure the muscle in such manner that its escape and retraction may not occur after the tendon has been excised and the muscle released from the grasp of the advancement forceps.

3. Secure the suture with such a knot as will permit of its being loosened for the purpose of increasing or diminishing the tension or the introduction of another suture farther back. The method is as follows: The conjunctival incision is made over and parallel to the attachment of the tendon of the muscle to be advanced. The tendon is secured by an advancement forceps, separated from the sclera,

and advanced, allowing the conjunctiva to retract. Two slender eye-needles on either end of a No. 3 iron-dyed silk suture are passed from within outward, perforating the capsule, muscle, and conjunctiva at a variable point, depending upon the amount of displacement to be effected, thus securing the middle portion of the muscle in a sling from which it can neither slip nor escape. With the exception of cases requiring a small amount of advancement at the muscle, or those in which the suture is used as a control to prevent an over-correction following a tenotomy, the portion of the tendon in the grasp of the forceps is excised about two millimetres anterior to the sling. The sclera being now fixed, preferably with Critchett's short fixation forceps, an unyielding anchorage in the form of a fibrous pulley is secured in the line with the rectus by introducing either needle into the dense episcleral tissue two millimetres from the corneoscleral junction. Both ends of the suture are now brought together, forming the first portion of a surgical knot, and tied to effect the slight over-correction. This may now be secured or provisionally held by the application of a bow until muscular tonicity shall have returned, thus enabling the effect to be modified at any time before adhesion has taken place. The suture is permitted to remain four days, unless it is desired to diminish the effect, which may safely be done after forty-eight hours by removing the suture and cautiously opening the wound.

#### OPERATIVE TREATMENT OF THROMBOSIS OF THE LATERAL SINUS.

A noteworthy communication upon this important topic was made to the Otological Section of the British Medical Association by ARBUTHNOT LANE, as reported in the *Brit. Med. Journ.*, No. 1706. He reports ten cases with nine recoveries, in which he laid open the sinus, ligated the internal jugular in the neck below any thrombus there encountered, and irrigated thoroughly the suppurating surfaces. This operation, which is generally accredited to the suggestion of Victor Horsley, although advised by Zaufal in 1880, has been practised with varying results by a number of surgeons, general and special, several of the successes having been very brilliant. No such group has hitherto been reported by one operator, and his results are likely to bring it into more favorable notice and more frequent employment by the general surgeon. It is, therefore, very fitting to direct attention to the long recognition of these cases and their fairly suc-

cessful treatment by the aural surgeon, as witness the publications of Schwartz, Hecke, Moos, and a number of others who have encountered instances of the affection apparently more severe than those of Lane, and brought an equal proportion of them to as speedy and perfect healing by simple mastoid trephining, or at times without any operation. Those also who have been less fortunate, and have secured autopsies upon their cases, have found at times total spontaneous disappearance of both clot and phlebitis from jugular and sinus, although every rational sign of their former presence had been distinct. It is to be hoped, therefore, that the surgeon will consider well the curative powers of nature, as well as the possibilities and value of his intervention for the removal of purulent foci in sinus or brain. The proportion of cures will doubtless be somewhat reduced by such conservatism, but it will be a less open question, how many of the cases have been operated upon needlessly; for it is not invidious to note that few surgeons have met more than one or two cases demanding operation, while Victor Horsley seems not yet to have employed in a single instance the operation which he is commonly credited with devising.

#### SURGERY OF THE URETERS.

As a result of a clinical, biographical, and experimental research, VAN HOOK (*Journal of the American Medical Association*, vol. xxi., No. 26) announces the following conclusions to an extremely able and scholarly paper:

1. The extra-pelvic portion of the ureter is most readily and safely accessible for exploration and surgical treatment by the retro-peritoneal route.

2. Hence all operations upon the ureters above the crossing of the iliac arteries should be performed retro-peritoneally, except in those cases in which the necessity for the ureteral operation arises during laparotomy.

3. The intra-pelvic portion may be reached by incision through the ventral wall, the bladder, the rectum, the vagina in the female, the perineum in the male, or by Kraske's sacral method.

4. The ureter is not only exceptionally well protected from injury, but by its elasticity and toughness resists violence to a remarkable degree.

5. The histology of the ureters furnishes most favorable conditions for the healing of wounds.

6. Longitudinal wounds of the ureter at any point heal without difficulty in the absence of

septic processes, under the influence of ample drainage.

7. In all injuries where the urine is septic before the operation, or where the wound is infected during the operation, drainage must be effected.

8. The chemic composition and reaction of the urine must be studied in all injuries to the ureter, the urine being rendered acid, if possible, and the specific gravity kept low.

9. The pelvis of the ureter is, *ceteris paribus*, the most favorable site for wounds of the ureter, since scar-contraction is not so likely there to be productive of ill results.

10. In aseptic longitudinal wounds of the ureter occurring in the course of laparotomy, suture may be practised and the peritoneum protected by suture.

11. Transverse wounds of the ureter involving less than one-third of the circumference of the duct, should be treated by free drainage (extra-peritoneal), and not by suture.

12. In transverse injuries in the continuity of the ureter, involving more than one-third of the circumference of the duct, stricture by subsequent scar-contraction should be anticipated by converting the transverse into a longitudinal wound and introducing longitudinal sutures.

13. In complete transverse wounds of the ureter at the pelvis, sutures may be used if the line of union be made as great as possible.

14. In complete transverse injuries of the ureter in continuity, union must not be attempted by suture.

15. In complete transverse injuries of the ureter in continuity, union without subsequent scar-contraction may be obtained by the writer's method of lateral implantation, as described.

16. In complete transverse injuries of the ureter very near the bladder, the duct may be implanted, but with less advantage, into the bladder directly.

17. At the pelvis of the ureter, continuity after complete transverse injury may be restored by Kuester's method of suture, providing the several ends can be approximated by slightly loosening the ureter from its attachments.

18. Rydgier's method of ureteroplasty in such injuries may be tried if other methods cannot be utilized. The primary operation should at least fix the ends of the tube together as nearly as possible.

19. In both transperitoneal and retroperitoneal operations the ureteral ends can be approximated by Van Hook's method even after the loss of about an inch of its substance.

20. The use of tubes of glass and other materials for the production of channels to do duty in place of destroyed ureteral substance must be rarely satisfactory, and even if temporarily successful, the duct is almost sure to be choked by scar-contraction.

21. The implantation of the cut ends of a ureter into an isolated knuckle of bowel is objectionable,—1, because the bowel is not aseptic; 2, because the operation is too dangerous.

22. In injuries of the portion of the ureter within the pelvis, with loss of substance, the ureter should be treated as follows: If possible, the continuity of the ureter should be restored by the writer's method.

23. If this is not possible, the ureter, if injured in vaginal operations, should be sutured to the base of the bladder with a covering of mucous membrane as far forward as possible, with a view to a future implantation or formation of vesico-vaginal fistula with kolpo-kleisis.

24. In injuries to the pelvic ureter during laparotomy, where the continuity cannot be restored, and where temporary vaginal implantation cannot be effected in the female, or vesical implantation in the male, the proximal extremity of the duct should be fastened to the skin at the nearest point to the bladder.

25. In ventral ureteral fistulæ opening near the bladder, the ureteral extremity may in some instances be planted directly into the bladder without opening the peritoneum.

26. In such cases where the ureter will not reach the bladder a flap may be raised from the anterior vesicle wall and reflected upward, extra-peritoneally, to meet the ureter and form a tubular diverticulum.

27. Such a flap may be so elongated by a preliminary operation to transplant the peritoneum back of the fundus, or by accurately suturing it there at a single sitting, that median ventral fistulæ of the ureter may be cured if they open at any point an inch or more below the umbilicus.

28. Symphysotomy is a valuable and justifiable preliminary step in these plastic vesical operations.

29. It is legitimate when both ends of a cut ureter open upon the abdominal wall to try Rydgier's method.

30. Implantation of one or both ureters into the rectum is absolutely unjustifiable under all circumstances, because (1) the primary risk is too great; (2) there is great liability to stenosis of the duct at the point of implantation; (3) suppurative uretero-pyelo-nephritis is al-

most absolutely certain to occur, either immediately or after the lapse of months or years.

31. Ligation of the ureter to cause atrophy of the kidney is unjustifiable.

32. Extirpation of a normal kidney for injury or disease of the ureter is absolutely unjustifiable, except where the ureter cannot be restored in one or other of the ways cited.

#### THE TREATMENT OF INTESTINAL OBSTRUCTION.

In the discussion of this subject at the annual meeting of the British Medical Association, PAGE holds that after careful examination under chloroform and failure to detect the seat of trouble, immediate abdominal section is indicated.

HUTCHINSON stated that, as a result of wide inquiries among his professional friends, he had a strong impression that laparotomy for intestinal obstruction of an unknown origin was very seldom successful, nor was he quite free from the suspicion that the operation in itself presented a cause of danger. He held that it was generally admitted at the present day, with all our improvements, that the fatality from strangulated hernia operations ranged from twenty-five to fifty per cent., we being in this respect not a whit better than our forefathers, no modern surgeon affording the excellent statistics of Mr. Luke; this despite the fact that many cases are operated on which would formerly have been reduced. Hence it would seem that, taken as a whole, the fatality of strangulated hernia has increased. Arguing from this, Hutchinson held that if it should become a common practice in intestinal obstruction to operate early and without attempting to relieve by other means, the fatality in this class of cases would be greatly increased. He himself strongly urged the importance of taxis, and was always accustomed to use all the force that his hands possessed, and often regretted that they tired so soon. Death, after forcible taxis, is extremely rare. Three patients in his practice perished after reduction of femoral hernia, but not one for inguinal. In the last twenty years he has strongly advocated abdominal taxis. This he applied by putting the patient under full anæsthesia and vigorously kneading the abdomen, the intestines being pushed from side to side. The patient is then turned on his belly, and in this position is well shaken; lastly, he is held head downward and again shaken up and down. Enemata are also administered with the body inverted. Many successes followed this manipulation. In some



instances obstruction has lasted for many days. Diagnosis of the precise lesion, excepting in the case of intussusception, is usually an impossibility. Obstruction from gall-stones are cases in point. Operations in these have been repeatedly performed, never with a correct diagnosis beforehand, and often with fatal result; whereas, if left alone, nearly all these cases recover.

HUME agreed with Hutchinson as to the present unsatisfactory result of operation in cases of internal obstruction, but took exception to taxis as increasing the vulnerability of the peritoneum.

COUSINS had two successful cases from following the Hutchinson method of taxis.

MORISON stated that he had seen four cases of hernia reduced *en bloc* with four deaths. He holds that herniotomy is very much less fatal than it was formerly, and that it is distinctly safer than vigorous taxis. In regard to internal intestinal obstruction, he stated that of all cases he had operated upon, when seen post mortem, intussusception excepted, he had never observed one which he could imagine likely to be benefited by such treatment as Mr. Hutchinson suggests. Morison showed that acute typhlitis and perityphlitis sometimes present the symptoms of obstruction, and called attention to the dangers of Hutchinson's manipulations in such cases. In chronic and incomplete cases of obstruction he holds that the best results will be obtained by washing the stomach out, the administration of nutrient enemata, the free use of opium, and stopping of supplies by the mouth. Nearly all acute cases die; certainly not five per cent. recover. He holds, however, that operative treatment will soon demand first consideration.

RIVINGTON called attention to the fact that the heavy mortality of laparotomy for obstruction is due to the fact that the surgeon is called in too late. Hence it is that Hutchinson can truthfully state that at the London Hospital there has not been a recovery from an abdominal section for obstruction, save in a single case of strangulation by a band. When the number of cases of operation within twenty-four hours have been put on record it will be fair to compare the results obtained by abdominal taxis and delay.

NEWMAN, as did nearly all the participants in this discussion, strongly urged the early administration of chloroform and careful examination of the abdomen during the relaxation accompanying this drug, followed by an immediate exploratory incision. He holds that the opening should be small, and if there is failure

to find the seat of obstruction through this opening, the bowel should be short-circuited by Senn's method, or enterostomy should be performed. When the bowel has been emptied of its contents, then the abdomen may be freely opened and the nature of the obstruction discovered and treated according to the individual requirements of the case.

#### RESECTION OF THE RECTUM AFTER THE REMOVAL OF MALIGNANT GROWTHS.

MARCY (*Matthews's Medical Quarterly*, vol. i., No. 1) holds that as soon as the diagnosis of rectal cancer is established, while the invasion of the parts is yet limited and local, inguinal colotomy is to be performed. The operation must be performed in two different stages,—that is, a loop of the descending colon is to be fixed in the abdominal wound, and there allowed to remain for several days, until the peritoneum is shut off by adhesive inflammation, before the intestine is opened. Performed in this way, colotomy is an operation of comparatively little danger. The lower segment of the bowel is thus put at rest, emptied of its contents, and easily disinfected.

This having been accomplished, an incision is made in the median line posteriorly to a point just below the end of the coccyx. The coccyx and a sufficient portion of the sacrum are removed to permit ready access to the bowel. The intestine is first freed posteriorly for about two-thirds of its circumference, and the peritoneal cavity is opened sufficiently to allow of easy manipulation of the intestine. The rectum is now divided transversely at the lower border of the disease; the upper segment is split longitudinally along its posterior wall, thus not only exposing the diseased structures, but facilitating the dissection of the intestine from its anterior attachment, which, in the male, is the more difficult because of the intimate relationship of the parts to the prostate and the base of the bladder. When this dissection is effected, the bowel is divided transversely above that portion which has been invaded by the disease. A further division of the mesorectum is now made sufficient to loosen the attachment of the intestine, so that its upper portion may be readily brought down to the line of its inferior division. This having been accomplished, the continuity of the gut is restored by suturing, or, in the case reported by Marcy, the Murphy button, reinforced with a line of sutures. The peritoneal opening is then sewed, and the wound, according to Marcy, is closed without drainage. The discharge of the

button is insured by a silk suture secured to it and brought out through the anus.

The advantages obtained by the operation are the radical removal of the disease, which, when accomplished at a sufficiently early period, gives expectation of further exemption from it. The sphincter and the anal structures are retained uninjured in character and function. The external tissues are normally approximated, and the lesion of the sacrum gives very little, if any permanent disability.

Subsequent operation for the restoration of the intestine divided in the colotomy, and its replacement in the abdominal cavity, restores the bowel in its continuity and function.

#### APPENDICITIS.

ROBINSON (*Mathews's Medical Quarterly*, vol. i., No. 1) founds the diagnosis of appendicitis upon pain and tenderness in the region of the right iliac fossa, and vomiting, tympanitis, and temperature. The pain is appendicular colic, which may be due to the amount of peritoneal surface damaged by the invasion of the infective matter. The constipation, the tympanitis, and vomiting are reflex. Lameness is due to pressure on the lumbar plexus, and the sudden cessation of pain may denote that the foreign body has been expelled into the cæcum. Oedema may be induced, or hemorrhage, or phlebitis in the right iliac fossa. Robinson compares the appendix to the tonsils, stating that it is subject to similar temporary inflammations at the same ages in both sexes. It is lymphatic in structure. Its glandular element is large.

One-half the appendicitis is catarrhal or parietal, and should not require surgical interference. Relapsing appendicitis is not a dangerous malady. All suppurative and perforative cases of appendicitis should be operated on as soon as diagnosed.

As a reason for the greater frequency of the affection in males than in females, the author suggests that Gerlach's valve is larger in men than in women. Robinson states that he knows of two surgeons who have operated on seventeen cases of diffuse peritonitis following appendicitis, and in every instance with a fatal result. Treves says that eighty per cent. of cases of appendicitis get well spontaneously. Talamon says ninety per cent. get well without operation. Guttman treated medically one hundred cases, and four died.

Robinson finally closes his paper with the statement that observation and practice seem to teach less surgery on the appendix than

formerly. Judgment is becoming more accurate as to what cases demand operation. The findings at autopsies would seem to limit operative work more and more.

#### APHORISMS IN THE TREATMENT OF SYPHILIS.

LANG (*Centralblatt für die Gesamte Therapie*, xii. Jahrgag, 1894), under the above heading, starts with the assertion that mercury and iodides are universally conceded to be anti-syphilitics, and that the only difference of opinion lies in the time and the manner of using these drugs, and the period during which they should be continued. Sarsaparilla, he holds, is also of great value, so much so that many cases treated in vain by the specifics recover in an astonishing manner when this drug is administered. In extremely feeble cases he holds that the best results are often obtained by paying strict attention to diet and hygiene, by administering sarsaparilla, and then finally giving the specifics. He employs a strong decoction, the dose being 2 or 3 teaspoonfuls. The iodide of potassium, he believed, is often given in unnecessarily large doses; in ordinary cases, from 4 to 30 grains a day will answer. When it is necessary to be careful of the stomach the iodides are given by the rectum, 15 to 60 grains being dissolved in 8 to 12 ounces of warm water, milk, or nutrient enema. In one case Lang administered the iodides subcutaneously in the form of a fifty-per-cent. solution, using from 4 to 8 grains a day. The pain incident to this injection may be avoided by incorporating codeine with the iodide in the proportion of 1 to 2 parts to 100.

Mercury acts unfavorably in cases of cancer, tuberculosis, malaria, or degenerative processes in general. The hemorrhagic diathesis is also exaggerated by this drug. Exceptionally even very small doses of mercury produce fatal poisoning. Thus two or three rubbings have produced sloughing and ulceration of the bowel and death. Fournier reports a case treated by him some years ago which showed no especial reaction to mercury, but, returning on account of recurrent brain syphilis, suddenly developed symptoms of poisoning under inunction cure which very nearly resulted fatally. Attention is also called to the chronic form of mercuric intoxication characterized by alteration in the nervous system. Even acute mercuric poisoning can occasion similar alterations. In some cases paralysis developed, in others polyneuritis.

Lang administers pills which should be made up fresh according to the following formula :

R Protiodide of mercury, gr. xxxii;  
Extract of opium, gr. viii;  
Lanoline, gr. xxiv;  
Milk-sugar, gr. lxxii.  
Make 50 pills.

Or, calomel or bichloride of mercury may be used in appropriate doses. Iodide of potassium is given in the same way.

Or,

R Potassium iodide,  $\mathfrak{z}$  iiss;  
Milk-sugar,  $\mathfrak{z}$  ss;  
Lanoline, gr. xlviii.  
Ft. pil. No. 50.

Or,

R Arsenbus acid, gr. iv;  
Milk-sugar,  $\mathfrak{z}$  ss;  
Lanoline, gr. xlviii.  
Ft. pil. No. 100.

Of the iodide pills, 3 to 15 are taken daily.

The inunctions afford an extremely powerful means of influencing syphilis, although they are open to the same objection which obtains against dosage by the mouth,—*i.e.*, the quantity absorbed is never definitely known. It is probable that a certain amount of mercury remains *in loco* for some length of time and is gradually taken up. It is difficult to account on other grounds for stomatitis developing weeks after the cessation of inunction cure. Absorption is equally uncertain in hypodermic injection. Unfortunately, most of the injection masses are so composed that the active principle, being heavy, sinks to the bottom, and, as Ullmann says, often a difference in strength of ninety per cent. occurs between two injections of the same bulk. The author uses a fifty-per-cent. gray oil, of which he injects at one time .05 gramme, and repeats the injections at intervals of three or four days. He selects the subcutaneous tissues of the interscapular region, as in the gluteal region there is danger of striking veins. His first injection is made at the base of the neck, an inch to the left of the middle line; each following injection is made an inch lower down until six are placed, when the skin on the other side of the central line is employed in the same manner. As a first treatment from eight to twelve such injections are required. Recurrences require from four to eight. Exceptionally, more than twelve injections may be needed. In this case the tissues are selected further to one side of the line of the vertebræ. This is the treatment preferred by Lang.

#### OPERATIVE TREATMENT OF VARICOCELE.

KOEHLER (*Berlin Klin. Woch.*, No. 50, xxx. Jahr.) holds that when a patient with well-developed varicocele complains of pain which is not relieved by a well-fitting suspensory, when the enlargement of the veins is increasing, or when it is occasioning atrophy of the testicle and reflexly producing a condition of mental depression, operation is imperatively required. The method of choice consists in exposing the veins by free incision, isolating them, and tying each one separately high up and low down, the portion between these ligatures being excised. This excision should be combined with an operation having for its end shortening of the scrotum. This end is easiest attained by tying together the ligated vein ends above and below; then the vertical skin wound is stretched laterally so that it becomes transverse, and the wound is sewed in this position.

#### EXPERIMENTAL RESEARCH CONCERNING TETANUS IMMUNITY.

TIZZONI and CATTANI (*Berlin Klin. Woch.*, No. 51, xxx. Jahr.), on the basis of extended experimental study, state that rats and guinea-pigs, as representing animals exceptionally sensitive to the action of the tetanus bacillus, are no longer susceptible to the injurious effects of this micro-organism when injected with serum of high immunizing power. These serum injections are most efficient when they are administered immediately on the first appearance of symptoms of tetanus. Their effects are much less satisfactory, and are accomplished much more slowly when the local tetanic symptoms have reached their maximum and both local and general manifestations are present. The injections are quite without power when the infection has become general and death is near at hand.

The quantity of serum necessary to cure an animal already exhibiting tetanic symptoms is very much greater than that required to produce immunity. Thus, at least two thousand times the dose necessary for immunity is required to cure the developing disease, and correspondingly, when the symptoms of tetanus are well advanced, the dose must be still further increased, so that a quantity of the antitoxine one hundred and fifty times greater than that required at the beginning of tetanus is necessary in these cases.

The injection of the serum does not immediately affect the symptoms already developed; indeed, after a time, it slightly accentuates

them; but it has the effect of localizing them and of protecting the system at large from general infection. The symptoms, having been in the first place localized, subside very slowly, cure requiring several weeks.

Even though a dose considerably more powerful than that required to accomplish cure is given, it does not essentially hasten convalescence. The immunizing and curative power of the serum depends solely upon the amount of antitoxine it contains, and not upon the varying strength of this antitoxine. Hence it follows that satisfactory results can be obtained from serum of different potency provided the experimenter knows exactly what this potency is, and can gauge his volume dose accordingly. By precipitation with alcohol the serum loses none of its strength. Hence this precipitate can be used as effectively as can the serum. The serum of various animals, the horse and the dog for instance, is potent against tetanus, the essential point being to discover in each case the amount of antitoxin contained in a given volume. With serum of the highest immunizing power,—1 to 1,000,000,—if the results of experiments on animals can be utilized as a basis for the treatment of the human, about .7 cubic centimetre would be required for the cure of a man suffering from the first symptoms of moderately acute tetanus. If the disease is further advanced, 21 cubic centimetres will be required. If the alcoholic precipitate is employed, 5 to 6 centigrammes should be used in the first case, 10 to 12 grammes in the second.

#### TREATMENT OF CORYZA.

In the *Tribune Médicale* (27 année, 2e sér., No. 2) the following directions are given for the treatment of acute coryza: (1) Confinement to the room; (2) washing of the nose, three times daily, either by snuffing up the medicament, or by irrigation with infusion of eucalyptus leaves, or simply a glass of water as hot as can be borne, to which is added a soup-spoonful of carbolic lotion, 1 to 20; (3) every two hours, after having blown the nose, a pinch of the following prescription:

R Chlorhydrate of cocaine, .10  
Menthol, .20  
Salicylic acid, .50  
Boric acid, 4.  
Powder of marshmallow, 10.  
Make into fine powder.

(4) if the frontal pain is extremely severe, take three or four times a day a pill made up according to the following prescription:

R Crystallized nitrate of aconitine, gr.  $\frac{1}{16}$ ;  
Bromhydrate of quinine, gr. xvi;  
Licorice powder.  
Make ten pills.

(5) when there is irritation of the skin, smear the nasal orifice and the upper lip with

R Vaseline, 10 parts;  
Boric acid, 1 part.

#### THE IMPENDING REVOLUTION IN MILITARY SURGERY CAUSED BY THE NEW INFANTRY RIFLE.

ANDREWS (*Journal of the American Medical Association*, vol. xxi., No. 26), after considering the changes which will be necessary in the position of surgeons and assistants at the time of battle,—changes necessitated by modern weapons,—contrasts the wounds produced by these weapons, particularly the rifle of small calibre, using smokeless powders, and injuries from the Springfield rifle used during the Civil War. He states, in a general way, that the old gun tears and shatters, the new one pierces; that the old projectile creates more shock and stops a wounded man more effectually; the new one causes less shock and less injury. It is evident that in future fighting most of the wounds will occur at the perforating and not at the shattering distance,—that is, between 350 and 1800 yards; hence field-surgery will have to deal with new conditions.

1. The wounds being smaller and less shattering, shock will be less, and the missiles will generally go through the body, and not require to be extracted.

2. The bullet, being so small, will have much less tendency to carry in with it patches of septic clothing and skin, and any bits that are lodged in the track of the wound will be so minute that a deep flushing of the wound with antiseptics will often sterilize the injury.

3. In cases where there is actually some chipping of a joint surface it will be possible to open the joint on the field, pick out the fragments, sterilize the cavity, and close it up, thus avoiding amputation.

4. It will in future be possible to avoid a large portion of the amputations and excisions which were formerly necessary.

5. In perforating wounds of the abdomen the tearing of the hollow viscera will be much diminished, giving a hopeful opportunity to save life by laparotomy on the field.

6. As prompt antisepticism of the wounds will be important, the hospital corps will have to be instructed how to do it before they bring in the patient.

7. The dispersion of the wounded over wide areas will increase the difficulty of prompt "first aid."

8. Field-surgery will be more scientific, and require a greater variety of operations; hence the poverty-stricken little cluster of instruments formerly furnished by the government to field-surgeons must have additions adapted to the new exigencies of the battle-field.

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## Reviews.

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**OPHTHALMIC NURSING.** By Sydney Stephenson, M.B., F.R.C.S. (Edin.). With sixty-one illustrations. London: The Scientific Press, Limited, 1894.

Dr. Stephenson informs us that his volume is the outcome of instruction given to nurses at the Ophthalmic School at Hanwell, and certainly those who have had the pleasure of listening to these lectures are to be congratulated upon the excellent instruction which they have received. It was high time that a book devoted especially to the nursing of diseases of the eye should be prepared, inasmuch as other branches of medicine have not been neglected in this respect. This one is thorough, practical, and sufficiently illustrated, although some of the plates, for example, the frontispiece, and the one illustrating the rods and cones, are fearfully and wonderfully made. This book may with propriety be read not only by nurses, but by physicians who are interested in the subject of ophthalmic operations, and we heartily commend it.

**TEXT-BOOK OF NORMAL HISTOLOGY, INCLUDING AN ACCOUNT OF THE DEVELOPMENT OF THE TISSUES AND OF THE ORGANS.** By George A. Piersol, M.D. With four hundred and nine illustrations, of which three hundred and fifty-eight are from original drawings by the author.

Philadelphia: J. B. Lippincott Company, 1893.

From the opening chapter, on "The Cell and the Tissues," to the appendix, containing a description of the most useful histological methods, this work is clear in expression, accurate in description, beautiful in illustration. Dr. Piersol's well-known skill as an artist has served him in good stead, and of the numerous plates scattered through its pages, a few of which are taken from well-known

authors, more than one hundred and fifty are the work of his own clever pencil. Not only the original drawings, but those which have been selected, exactly meet the needs of the student in his efforts to learn and retain the facts of microscopical anatomy. As Dr. Piersol himself points out, they are sufficiently diagrammatic to be efficient aids in the comprehension of the text, but are none the less faithful likenesses of the original preparations. Among the many commendable features, there is one to which we would particularly call attention,—namely, that the preparations from which the drawings have been made, as far as possible, have been taken from human tissues.

In a book that is symmetrical, it is difficult to select, even if it were advisable, chapters that are particularly noteworthy; but, perhaps, owing to Dr. Piersol's early training as an ophthalmic surgeon, it is not unnatural that the section devoted to the eye and its appendages is singularly good, not only in its descriptions, but in the accuracy and beauty of its illustrations. For example, the plates illustrating a section through the ciliary region of the human eye, the human choroid, and the anterior segment of the human eye, including cornea, sclera, iris, ciliary body, and lens, have no superiors anywhere, and we doubt if they have their equals. This book at once takes front rank, and should be in the possession of every one who is interested in this important subject.

The publishers are to be congratulated upon the excellence of the book-making, the clear type, the satisfactory paragraphing, and the emphasizing by the use of heavy type of the important words in each section. A satisfactory index completes this capital textbook.

**ESSENTIALS OF PRACTICE OF MEDICINE ARRANGED IN THE FORM OF QUESTIONS AND ANSWERS.** By Henry Morris, M.D., with an appendix on the Urine, by Lawrence Wolff, M.D., and a formulary by W. M. Powell, M.D.

Philadelphia: W. B. Saunders, 1894.

The author tells us in his preface to the third edition that the book has proved of value to the medical student to such an extent that at the end of three years a third edition is called for. This fact seems to prove that it does fulfil the office for which its publisher and the author intended it, and that it contains a careful summary of most of the facts in connection with the study, if not of the application, of practical medicine. The statement, however, that the very latest treatment has been inserted is hardly accurate. For example, under

"Typhoid Fever" we are unable to find anything about the use of the Brand or cold-bath treatment. Under "Diphtheria" nothing is said of the employment of peroxide of hydrogen locally, and the dose of corrosive sublimate, which is recommended, has been criticised as excessive,—namely,  $\frac{1}{10}$  of a grain every two hours. Other therapeutic points are discussed in a similar manner. In regard to etiology, nothing is said under "Erysipelas" of the fact that the disease is due to micro-organisms, but we are told that it is "due to a special poison, and is slightly contagious."

OUTLINES OF PHYSICAL DIAGNOSIS OF THE THORAX.

By A. M. Corwin, A.M., M.D.

Chicago: W. T. Keener Co., 1893.

This is a little book bound in a pliable cover, small octavo, containing one hundred and twelve pages, and is intended as a tree upon which the student may hang the ideas which he learns in the study of physical diagnosis. We have no doubt that to those students who follow Dr. Corwin's course it will be a useful guide and aid.

CLIMATES OF THE UNITED STATES IN COLORS. By

Charles Dennison, A.M., M.D.

Chicago: W. T. Keener Co., 1893.

This small book is composed of a large number of maps showing the direction of the wind, the humidity, temperature, cloudiness, and rainfall of the entire United States, with the object of providing the physician and others with a reliable guide in the selection of a climate, or in the prognostication of storms. The fact that so careful a worker as Dr. Dennison has prepared these maps is a sufficient guarantee of their accuracy, and the popularity of them in previous editions has shown that this unusual way of providing medical information has proved popular.

Any one who is called upon to determine upon the climate to which a patient should go should be possessed of this volume.

THE TECHNIQUE OF POST-MORTEM EXAMINATION. By

Ludwig Hektoen, M.D. Illustrated.

Chicago: W. T. Keener Co., 1894.

In this small octavo of one hundred and seventy pages, Dr. Hektoen has given the student a very valuable manual, which will be of use to him for reference, should he be wise enough to make as many post-mortems as possible after the diploma has been conferred. The method of opening the various cavities of the body and of examining the organs macroscopically, together with the incisions which should be made for the expo-

sure of important parts of these organs, are all clearly detailed, and it is evident that the illustrations have been taken from the post-mortem table direct, and are not merely theoretical diagrams. It is always a pleasure to review a book which is of value, and a still greater one when the reviewer is thus given an opportunity of praising the writings of one who has contributed so much interesting and valuable material to the study of pathology in America.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN FOR THE USE OF STUDENTS AND PRACTITIONERS. By James Nevins Hyde, A.M., M.D.

Philadelphia: Lea Brothers & Co., 1893.

America is as fortunate in the number of its eminent dermatologists as is Germany. The text-books which have been written by Duh-ring, Taylor, and Hyde have done more than anything else towards rendering the study of this subject attractive and profitable. The third edition of Dr. Hyde's book possesses all the advantages which the previous editions have contained, and is certainly one of the most practical works for the ordinary physician who is forced to treat diseases of the skin. In the beginning of the description of each disease is the derivation of its ordinary name, its synonyms, and the frequency with which it occurs. A peculiar advantage of the book is, it seems to us, the clear descriptions of the treatment which is to be instituted. In many instances standard prescriptions are given, while in other cases suggestions as to the combinations of remedies are so practical that the physician has no difficulty in applying the remedy needed in an individual case. The illustrations for a book of its kind are unusually copious, and in many instances are taken from the writer's own practice and not copied from other authors, as is so often the case. References are given with sufficient frequency to enable the special student of dermatology to carry on his researches in dermatological literature as far as he desires, yet are not so frequent as to spoil the appearance of the pages, or to injure the continuity of the text.

It is not surprising that Dr. Hyde's book has reached its third edition in ten years, for, although it deals entirely with a specialty, it is just the work for both the specialist and the general practitioner. A valuable portion of the book is the recognition by the author of the most recent bacteriological researches in connection with skin-disease, as, for example, the recognition of the streptococcus pyogenes as the streptococcus of erysipelas.

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## Original Communications.

### LOCAL TREATMENT IN DIPHTHERIA.

READ BEFORE THE NEW YORK STATE MEDICAL SOCIETY,  
FEBRUARY 7, 1894.

BY A. JACOBI, M.D.,

Clinical Professor of Diseases of Children, Medical Department,  
Columbia College, New York.

THE bacilli and the toxine of diphtheria will invade the circulation by direct inhalation into the lungs in but very few instances. These are some of the cases in which the constitutional symptoms precede the local. Local deposits, however, are not always visible, as, for instance, in those cases in which

the constitutional symptoms are connected with diphtheria of the nose, where but few deposits take place, and the virus—the nasal discharge being slightly bloody—is absorbed directly into the open blood-vessels. In the vast majority of cases, however, local deposits are easily found, and mostly on the mucous membranes, rarely on that of the intestines, very exceptionally the gastric, more frequently the genito-urinary, particularly the vagina, rarely the bladder, in most cases the pharyngeal or respiratory mucous membranes. Besides, diphtheritic pseudo-membranes are found on abrasions of the skin by scratching, eczema, erysipelas, vesicatories, and in surgical wounds, such as circumcision and amputation wounds,

tracheal incisions, resection of tonsils or removals of adenoid growths. It is on the external wounds that the effect of local treatment can be best studied.

The local remedies employed have been used for the purpose of either directly destroying the pseudo-membrane, such as nitrate of silver, carbolic acid, the actual cautery; or to dissolve them, such as the alkaline carbonates, the chlorides, steam, papayotin; or to act as astringents, such as lime-water and the chloride and subsulphate of iron; or to disinfect, such as the potassic chloride, chloral hydrate, turpentine, carbolic acid, mercury, sulphur, bromine, iodide, iodoform, chlorine-water, and peroxide of hydrogen. The methods of application have been either direct local administration by the attendant, or washes and gargles, sprays, injections, inhalations.

The local treatment of the mouth and throat has two indications,—first, to keep the mucous membrane of the cavities in a healthy condition or restore them; second, to influence the diseased surface. Gargles in any shape will reach the oral cavity only. They never touch anything beyond the anterior pillars of the soft palate, and seldom more than a small part of the tonsil. The gargles with chlorate of potassium, the benzoate or biborate of sodium, have only a preventive, not a curative, effect; still, they ought not to be neglected when the children are old enough to use them. Mild solutions of the above salts may also be introduced into the mouth of babies from time to time by means of a brush or a pipette. Local applications to the throat, even where they are possible, ought not to be made with powders. They are apt to nauseate and produce vomiting by their mere contact. Even powders for internal administration require careful mixing with water, or they are liable to irritate the throat; thus, the direct application of calomel, the oxide of mercury, or sulphur ought to be avoided. Applications of substances with bad taste or those that give pain must be avoided, because the struggling and consecutive exhaustion of the patient will do more harm than the remedy will do good. That is so with a number of substances, particularly with the chloral hydrate and even with the chloride of sodium, which was recommended some years ago as a local application to the pseudo-membrane of the tonsil.

In diphtheria the danger arises, first, from suffocation. That can be easily recognized, and the indications for the treatment by mechanical means—that is, intubation or tracheotomy—are readily found. These are the cases

in which repeated fumigations with 10 to 15 grains of calomel, under a tent or in a small room, are used to advantage. Steam will also answer well under the same circumstances. The second great danger is from exhaustion and heart-failure, which is not merely functional, but organic. It is always to be feared, for it is known that apparently mild cases may thus perish. The indication, then, is to save as much nerve strength as circumstances will permit. The third great danger is sepsis, which is not to be feared to an equal degree in all cases, for those cases of diphtheria which are confined to the tonsils, with its large amount of elastic tissues surrounding it, and with their scanty communication with the lymph system, are not liable to produce sepsis, and thereby to terminate fatally. Both sepsis and fatal termination are the results rather of those cases which are confined to or implicate the nares and the naso-pharynx.

Where the diphtheritic pseudo-membrane is within reach, it ought to be either destroyed or disinfected. For that purpose a fifty-per-cent. solution of carbolic acid in glycerin may be applied several times a day, or the tincture of iodine, or solution of 1 part of the bichloride of mercury in 100 or 500 parts of water. It is in these cases that chlorine-water has been injected through the surface into the upper layers of the tonsils. But we must never forget, first, that only a small part of the pharynx is accessible to such treatment, and that it is only one class of patients who can be subjected to it. In order to be effective, the application must be thorough. None but adults or large children, and of them only a small number, will submit to opening their mouth and having the applications made. It is that very class of patients who can be induced to gargle with anything like success. Smaller children will object, will defend themselves, will struggle. It takes many a good minute to force open the mouth; meanwhile, the patient is in excitement, perspiring and screaming, exhausting its strength. You may succeed in forcing open the jaws; then there begins the practice of making applications, of swabbing, of scratching off the pseudo-membrane, of cauterizing, of burning. The struggling child will prevent you from limiting your application to the diseased surface. You cannot help injuring the neighboring epithelium; thus the process will spread. Instead of doing good, you have done harm; for, indeed, no local application can do as much good as the struggling of the frightened child does harm. I have seen them die while defending themselves



against the attempted violence, leaving doctor and nurse victorious on the battle-field. It is incredible, but it is true, that more than one has recommended using the electro-cautery or the thermo-cautery on the throat of the baby, after forcing the mouth open. It is almost incredible, for you are aware that the offenders cannot have been ignorant of the fact that what they can reach with their instruments is but very little besides the tonsil, and they might have known that the tonsils are not apt to favor the inception of sepsis into the system.

There is an easy way of using disinfectants on the throat and mouth: give medicines which are, at the same time, disinfectants, digestible, and easy to take; give them in small doses; give them frequently; see that when they have been given, no water nor milk is taken immediately afterwards, so as not to wash them off from the mouth and throat. Such medicines are mild dilutions of the tincture of chloride of iron, or lime-water, or boric acid, or bichloride of mercury, most of which will act both by their constitutional and their local effect.

Diphtheria is most dangerous when located in the nose and naso-pharynx. The changes taking place in the nares may be an extensive catarrh, besides the diphtheritic deposits. The diphtheritic membranes are sometimes very thick, and contain a great deal of fibrin. Sometimes they are so thick as to clog the nares and prevent respiration. Underneath them copious absorption of toxins may take place. In most cases, though, the diphtheritic membranes are not so thick. Some of them macerate very readily, and the toxin is very speedily absorbed through the exceedingly copious lymph-ducts, and sepsis is the result. In some cases of diphtheria the membranes can hardly be seen. The discharge from the nose is liquid and acrid, contains small flakes and some blood. These are the cases in which the toxin is absorbed directly into the blood. All of these forms may lead to necrosis and gangrene of the tissue, and produce a very peculiar sweetish, nasty odor. Thus, the inhaled air is poisoned, and, being carried down into the lungs, acts as an additional danger. The most dangerous locality is the posterior nares, with their direct communication with the lymph-bodies below the angle of the lower jaw. The pseudo-membranes, the lymph-ducts, lymph-bodies, swarm with bacilli and toxin, with streptococci, with staphylococci, and lead to immense tumefaction between the ears and clavicles, to the formation of multiple abscesses, to hemorrhages, to sepsis. All of these forms of

nasal diphtheria require immediate, persistent, and efficient local treatment, for it is safe to say that every case of nasal diphtheria has a tendency to terminate fatally. The local treatment is to consist in cleansing and disinfecting. In most cases these two are identical, for if we simply succeed in washing out the macerating material, that would prove sufficient. In order, however, to have that effect, the washing and disinfecting must be done often,—every half-hour, every hour, every two hours. In the bad cases, in which the nares are clogged with pseudo-membrane, the cleansing and disinfecting is to be preceded by forcing a passage through the nares with a probe covered with wadding and dipped in carbolic acid. Particularly is this indication urgent when there is sopor, which owes its origin partly to the difficulty of respiration and partly to the septic condition. The methods of local treatment, besides the one just described, are the application of ointments into the nose by means of the brush or wadded probe, or the use of the spray or syringe or irrigator, or the use of a spoon or feeding-cup, through which liquids are poured into the nares.

In making local applications it is important that the whole surface should be touched; therefore ointments are not available in the average cases where the whole naso-pharynx is the seat of the affection. The atomizer will seldom convey a sufficient amount of liquid into the cavities to be of much use. A spoon or small feeding-cup, the nozzle of which is narrow enough to enter the nose, will do fairly well, and will allow the introduction of liquids into the nares in small or large amounts, all of which will enter the throat, be either swallowed or flow out. The irrigator is liable, by undue pressure, which cannot always be well measured, to injure the ear. It is true that this cannot take place very readily so long as the whole naso-pharynx is covered with pseudo-membrane, but this will not always remain, and then there is a possibility of the injection entering the middle ear. This will take place the more readily the younger the infant, because the pharyngeal orifice of the Eustachian tube is relatively larger and more funnel-like in the very young than in advanced age. I prefer a small glass syringe with a conical nozzle of soft rubber. It will close up the nostril, the pressure can always be well measured and modified, and it is effective. The injections must be made in the recumbent or semi-recumbent position. On no condition must a child be taken out of bed for the purpose of having the nares washed and disinfected. I know of many

cases in which the patient has died simply from being taken up repeatedly.

The applications to be made may be quite simple. In many cases a solution of table salt in water (7 to 1000), or boracic acid (3 or 4 to 500), or lime-water will answer all purposes. The latter is particularly indicated when there is a thin, acrid, slightly fetid discharge. A more efficacious disinfectant than all of those mentioned is the bichloride of mercury, 1 part mixed with 100 parts of chloride of sodium in from 2000 to 10,000 parts of water. It can be used freely.

If moderate quantities of a mild solution of bichloride of mercury be swallowed while being injected, no harm is done. Where there is a fetid odor, the nares ought to be deodorized by carbolic acid or creolin.

Carbolic acid may be used in solutions of from 1 to 10 in 1000 parts of water, but it must not be forgotten that there is some danger in swallowing the carbolic acid, because of the nephritis which it may give rise to. For the same purpose of deodorizing, creolin may be used in one-per-cent. solutions.

For the purpose of dissolving membranes, papayotin (not the proprietary medicine sold under a similar name) has been used in five-per-cent. solutions, either as a spray or injection, or direct applications by means of a sponge or brush. I have used it to dissolve the diphtheritic membranes of the trachea below the tracheotomy tube in greater concentration. Its application in powder does not answer well. For the same purpose trypsin in five-per-cent. solutions has been employed, mixed with bicarbonate of sodium.

The cervical lymphadenitis, of which I have spoken as the result of nasal diphtheria, must be treated persistently and effectively. This treatment may be preventive and curative. The preventive treatment consists in the nasal injections described. When large tumefaction has taken place, tincture of iodine has been applied externally; it is useless. Mercurial ointments have been applied; they are useless, both as a remedy and as a means of massage. Ice externally is rational, but it is useless as long as the infection is not stopped. I have in a number of instances injected iodoform, in ether, into the swelled mass. It is too painful and too inefficacious, and does not pay for the agitation, anguish, and exhaustion of the unhappy baby. So, indeed, there is no remedy, besides the preventive measures, except in long and deep incisions into the immense mass. Do not wait for fluctuations or even semi-fluctuations to become apparent. A great

deal of the swelling is inside the fascia. Abscesses, when they form, are seldom large. The contents consist more of necrotic tissue, which ought to be laid open as soon as possible and disinfected. The incision must be a long one: in most cases from ear to clavicle. The disinfection of the wound may be obtained by subnitrate of bismuth, by tincture of iodine and iodoform, or other antiseptic gauze. No carbolic acid can be used for disinfection, because of its tendency to give rise to hemorrhages. When hemorrhage takes place, it is apt to stop, under pressure with antiseptic gauze; but sometimes, large blood-vessels having been eroded, the hemorrhages are very copious. In such cases the actual cautery, acupressure, sometimes the ligature of blood-vessels, have to be resorted to. Chloride of iron and subsulphate of iron must never be used on such necrotic surfaces. They give rise to a thick coagulated scab, under which septic absorption is apt to take place.

The treatment of diphtheritic paralysis is in part local. Friction and massage of the paralyzed limbs, either dry or with oiled hands, or with alcohol and water, will restore circulation and nutrition to the muscles. The principal indications for local treatment, however, are found in those cases in which the respiratory muscles are paralyzed and life is in imminent peril. Fortunately, these cases are rare, but they require immediate treatment. In the neighborhood of the paralyzed muscles strychnine injections can be made at brief intervals, and the electrical current must be passed so as to stimulate the paralyzed muscles. Care must always be taken, however, not to over-stimulate, thereby paralyzing the muscles, which is the invariable result if the current is allowed to pass through the tissues uninterruptedly.

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#### THE TREATMENT OF MITRAL STENOSIS.

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I HAVE entered very fully into the treatment of this affection in my papers in the *Liverpool Medico-Chirurgical Journal* of 1886 and 1887, but must now further elucidate this important subject. I may premise that there are few chronic diseases so amenable to treatment and so compatible with a comparatively long life of comfort if judiciously handled.

In the early stages of mitral stenosis, when the contraction of the mitral orifice is not great, a slight hypertrophy of the left auricle

and right ventricle may be sufficient to maintain the cardiac balance. We should, then, lessen the high arterial tension which is usually present, so as to obviate all strain on the mitral valve, and thus prevent the development of the stenosis. The tension is best lessened by the administration of salines and alkalies, moderate exercise, a light diet, with little fluid. In these cases there is generally a rheumatic tendency, and the mode of life should be prophylactic, against the development of acute attacks of rheumatism. The patient should be warmly clothed with flannel next the skin, and he should avoid all vicissitudes of climate. When at any time the feet are damp or the body wet and chilled, the clothing should be changed and the surface circulation re-established as quickly as possible. The action of the skin should be maintained, and for this purpose daily ablutions are necessary. A morning bath, at a temperature from 60° to 80° F., according to the susceptibility of the patient, with coarse friction afterwards, will be found very advantageous. The combustion within the system should be as thorough as possible, and with this end in view the patient should avoid all close, heated atmospheres, and live as much as possible in the open air. A warm, dry climate is the best. He should live at not too great an elevation from the sea-level, so as to obviate the effects of a rarefied atmosphere, which leads to pulmonary congestion, and further tasks an already overworked right ventricle. The life should be at a low level, not merely so far as the earth's surface is concerned, but in every other respect, and free from all mental worry and care. The patient should be enjoined to "pursue the even tenor of his way" in a happy and contented frame of mind, and simple pleasurable emotions should not be forbidden. Marriage cannot be recommended; and especially in the case of a female, a timely counsel against wedlock and its usual results will be advisable. When the disease is advanced, even strong emotional excitement, irrespective of childbearing, is highly injurious. Some years ago I tried to dissuade a young lady from matrimony, but to no purpose. About twelve months afterwards, under a little over-exertion and domestic anxiety, her heart gave way, and I was called down to Wales to see her dying from cardiac failure and hæmatemesis. However, I have known many non-emotional women, suffering from mitral stenosis, to bear large families. Pregnancy and parturition largely increase a woman's risks under these conditions, but still she can usually be carried safely through

her troubles. A few years ago I saw, with my friend, Dr. G. G. Stopford-Taylor, a woman in the last days of gestation, who was apparently dying from mitral stenosis, with cardiac failure. We discussed the propriety of inducing premature labor, but determined to try the effect of treatment first. She received immediately a hypodermic injection of  $\frac{1}{2}$  grain of atropine, followed by a dose every three hours of 1 minim of liquor atropinæ sulph. and 1 minim of a one-per-cent. solution of nitro-glycerin. She got 5 grains of calomel, and all fluid was absolutely interdicted. In a few hours she was comparatively comfortable, except for the effects of the atropine, and two days afterwards was safely delivered. She made a good recovery.

Some years ago I saw, with Dr. Bowen, a patient affected with mitral stenosis, who, after her confinement, had a large thrombus carried from the uterine sinus and lodged in the pulmonary artery. She was suffering from urgent cardiac dyspnoea, livid, cold, bathed in perspiration, and almost pulseless. Under the influence of 5 minims of liquor ammoniæ fort. every half-hour the clot gradually disappeared, and she made a good recovery. The case was published in the *Liverpool Medico-Chirurgical Journal* by Dr. Bowen. In all cases of blood-clotting there is no remedy equal to strong solution of ammonia, which was first recommended in such cases by Sir B. W. Richardson.

Short of actual fatigue, a fair amount of exercise, even to the extent of climbing hills, will prove highly beneficial, by favoring the circulation, increasing the combustion, and improving the general nutrition. The skeletal muscles contain about a fourth of the whole blood of the body, and this exercise greatly increases the circulation through them, and so increases the capillary area. On the other hand, if they be not used, they require very little nutrition; comparatively little blood passes through them, as it tends to flow in the direction of least resistance; thus the capillary area is diminished and the general arterial tension increased.

The food should be light and nutritious, with a fair proportion of vegetables, and no meal should be so heavy as to unduly distend the stomach. The food should merely be sufficient in quantity and quality to maintain healthy nutrition. I am in the habit of advising my patients to drink as little fluid as possible, never more than two pints a day; and if the tissues be at all flabby, or there be any venous turgescence, I frequently reduce them to half this amount. All fluids drunk have to pass through the circulation before

they are excreted, and any extensive amount only handicaps the right side of the heart without producing any benefit. I know that some physicians like to drench their patients, with the view of washing away effete products, but it is a much wiser plan not to produce more effete products than can be excreted without flushing. The regular use of all alcoholic drinks should be strictly interdicted. Tea, coffee, and cocoa may be left to the discretion of the patient, except so far as quantity of fluid is concerned. With some practitioners milk is a universal food for all the ills to which flesh is heir, but I do not recommend it for rheumatic or gouty patients, and in cases of mitral stenosis it has the further disadvantage of being a liquid food. Tobacco should be forbidden. In this early stage of the disease drugs are unnecessary, except for some complication which may arise, or some failure in compensation from excessive strain or other cause. There is usually not much anæmia, so that iron is not often required, but when prescribed it should be combined with a laxative, and preferably with one which acts on the liver. I have shown that mitral stenosis not infrequently arises in anæmic conditions, and so that cause or associated condition of the lesion should be removed.

If the rules which I have laid down be strictly adhered to, the disease may make slow progress and the patient enjoy many years of a very comfortable life; but the lesion has a progressive tendency, and as the mitral orifice becomes smaller, disturbances in the circulation are more easily developed and the secondary effects become more permanent. The further treatment of the case, beyond the general plan which I have already indicated, will mainly depend on the nature of the complications which arise.

When any indication of failure of compensation in the right side of the heart occurs, there must be no fashionable treatment by graduated exercise on a mountain-side, but the excellent old-fashioned restorative of rest in bed must be at once adopted. If the disease be in an early stage, a few days' rest, a dry diet, and a cholagogue cathartic may be all that are required to restore the *status quo ante*. If a long stay in bed be deemed advisable, then *massage* should be substituted for the loss of active muscular exercise. This improves the circulation in the muscles, increases the quantity of blood in the systemic vessels and so indirectly lessens the pulmonary engorgement and hastens the return venous current.

There is more or less constantly high tension

in the pulmonary circuit, and in my article on the "Etiology of Aneurism" (*Liverpool Medico-Chirurgical Journal*, July, 1881) I have shown how this leads to atheroma; in fact, the only marked atheroma which I have observed in the pulmonary veins has been in cases of mitral stenosis. This pulmonary engorgement dilates the left auricle, causes bronchial secretion, and eventually leads to brown induration of the lungs, with more or less destruction of lung-tissue. These conditions are best obviated by reducing the fluid in circulation, and keeping as much of that as possible in the systemic vessels by the methods which I have already indicated. The lungs may become so engorged that nature seeks relief by a profuse hæmoptysis, and in these cases this is the most direct and best method of bloodletting. Instead of appreciating the efforts of nature, it is no uncommon thing to see the physician attempt to stop the hæmoptysis at all hazards. The patient is plied with gallic acid, ergot, or acetate of lead, which leads to arterial contraction, with still further engorgement of the lungs, and perhaps a fatal issue, if nature does not assert her right by a still more copious bloodletting. In these cases some propose to relieve the right side of the heart by free venesection of the veins of the arm, but they fail to see that you cannot siphon the blood backward, but you only withdraw it in the course of the circulation from the arterial system, which already contains too little. If you wish to bloodlet, you can only do so with any degree of efficacy from the hemorrhoidal veins, which are in immediate communication with the inferior vena cava. In a very urgent case it might perhaps be permissible to perform the operation suggested by Dr. Westbrook, of aspirating the right ventricle. Such cases, however, are best treated by brisk catharsis with saline purgatives; sweet spirits of nitre, or small doses of nitro-glycerin, to increase the capacity of the systemic arterioles and capillaries, and thus indirectly relieve the engorgement of the lungs, lessening the quantity of liquids ingested, so as to diminish as far as possible the fluid in circulation, and then employ such a hæmostatic as turpentine, which clears out the blood lodged in the air-vesicles. I now wish to add another mode of bloodletting by aspirating the liver. Those who have seen cases of death from asphyxia know what an enormous quantity of blood that organ is capable of containing, and how greatly and rapidly it may thus become enlarged. That an analogous condition exists in cases of mitral stenosis is well known, though this chronic congestion may and does lead to a

form of cirrhosis, in which cases the blood will not be so readily abstracted. Therefore depletion of the liver is easily practised in proportion to its size. When there is hæmoptysis, there may be failure in the compensation of the right ventricle, but its force remains fairly good, because when its contractile power is greatly diminished, or there is free regurgitation through the tricuspid orifice, the intrapulmonary pressure at once fails; therefore hæmoptysis affords an indication for relieving the pulmonary engorgement rather than the right ventricle. This, no doubt, could be readily done by bleeding from the arm or jugular, or even more directly by opening an artery, if there were free communication through the mitral orifice, which would enable the left ventricle to withdraw the blood from the lungs as quickly as it pumped it out at the open vein or artery; but there is not; hence we must content ourselves with the rational lines of treatment which I have indicated. With the diminution of the quantity of blood in the lungs, the distention of the left auricle is lessened, and so its contractile power is better able to assist in carrying on the circulation.

In mitral stenosis, so long as the force of the right ventricle remains effective and there is no bronchitis, the blood passing through the lungs is well oxygenated, the left ventricle drives its bright-red blood well into the systemic capillaries; hence patients usually present a florid, healthy appearance, and have not that livid, dusky hue which is so common in cases of mitral regurgitation. Once there is marked failure of the right ventricle, the blood does not pass freely through the lungs, and the left ventricle does not receive a sufficient quantity of oxygenated blood to maintain the systemic capillary circulation. The blood accumulates in the lungs and left auricle, the right ventricle becomes greatly dilated, the tricuspid orifice incompetent, the right auricle distended, the greater part of the blood accumulates in the venous system, so that the veins, down to the minutest radicles, become overloaded; the work of the left ventricle is increased, which now, perhaps, through failing nutrition, gets also dilated; the circulation becomes stagnant, the mucous membrane livid, the countenance bloated and dusky, the surface cold and even death-like. There is usually very little anasarca, because there is no extra blood or excessive pressure in the systemic capillaries. The whole venous system, including the liver and portal circulation, is engorged, and when there is free tricuspid regurgitation

the dropsy not infrequently begins as an ascites. Here you have got not only the overloading of the whole venous system, which necessarily begins in the most distal veins, due to the mitral disease, but also a positive forcible backward impulse against the advancing current, which necessarily first tells on the large mass of blood in the vena cava and such main branches as the hepatic veins. The impulse may cause the whole liver to pulsate, and anyhow it obstructs the portal circulation, and may thus give rise to ascitic effusion. (I have dealt with this point in my article on the "Pathology and Treatment of Dropsy," in the *Journal* of July, 1886, so need not refer further to it here.) There is urgent orthopnoea, the radial pulse is quick, very small, weak, and irregular. The sphygmograph shows that, while the arterial tension may be comparatively high, only a slight pressure is required to obliterate the pulse; its volume is small, duration short, and many of the beats fail to reach the wrist or are only recorded as interpolated pulsations in the downstroke. The dilated right ventricle struggles ineffectually, but it may be violently, especially if the failure in compensation be due to overwork or acute strain before there is degeneration of its muscular fibre, to perform its task. The action of the heart is tumultuous and the principal impulse over the right ventricle; the rhythm is very irregular, and presents the characteristics to which I have before referred. There may be a single first sound followed by a double second, or sometimes a double first followed by a single or double second sound. There may be a strong impulse of the heart, due to the right ventricle, accompanied by a weak pulse or absent beat at the wrist, indicating a feeble left systole. One or more weak pulse-beats may succeed or be succeeded by a forcible contraction of the left ventricle. When there is almost absolute failure of the right ventricle, with free regurgitation through the tricuspid orifice, this peculiar irregularity of rhythm disappears: there is very little onward movement of the blood; the left ventricle receives little and propels little blood; the right ventricle is well supplied, but drives the greater part back through the dilated orifice; the circulation then almost comes to a stand-still, and eventually the heart ceases to beat.

Even in these extreme cases bloodletting from the arm is generally spoken of and boldly advocated as the *dernier ressort*, but what good it can accomplish, save in the imagination of the operator, I fail to see. You only thus assist

nature in emptying an already depleted arterial system, and so hasten the not far distant end. That the personal equation comes largely into play in observing the effects of treatment there can be no doubt, and in no class of cases more so than those under consideration. The sanguine operator generally thinks he sees the result he expected, and the frightened patient experiences the very temporary relief which he was told would take place. The motto would seem to be "draw blood," it does not matter from where or how, so that verily there would seem to be danger of our falling into the errors of our forefathers.

When the right side of the heart is over-distended, so that it cannot effectively contract, there can be no doubt but that depletion is the most rapid and perhaps best method of enabling it to do so. In an urgent case, therefore, I would have no hesitation in aspirating the right ventricle or right auricle, as suggested by Dr. Westbrook, of Brooklyn. In less urgent cases I would freely aspirate the liver or open the hemorrhoidal veins. The right ventricle should be further relieved by brisk cholagogue cathartics. The action of the heart should be aroused by external warmth, sinapism to the præcordia, ammonia to the nostrils, and the internal use of such remedies as nitro-glycerin with atropine, ammonia, ether, or alcohol, these drugs to be given with as little fluid as possible; when the patient is cold and pulseless, ether and atropine may be injected hypodermically.

When the urgent symptoms have been tided over, it may be necessary to give such cardiac tonics as digitalis, caffeine, convallaria, and strophanthus. As a cardiac tonic, strophanthus is my favorite in mitral stenosis, digitalis in mitral regurgitation, to lessen the size and increase the force of the right ventricle, but they are usually better combined with some agent to lessen and more evenly distribute the work of the heart, such as nitro-glycerin, sweet spirits of nitre, or alcohol. Atropine is a respiratory stimulant, a cardiac tonic, and also lessens peripheral resistance, and in some cases I have found small doses of it, with nitro-glycerin, to answer admirably. It must be remembered, however, that with advancing recovery and diminution of blood in the veins, it is not prudent to greatly dilate the systemic arterioles, which would thus allow too free an escape of blood through the capillaries into the veins, and keep the arterial pressure at a low ebb. About  $\frac{1}{16}$  grain of atropine, combined with a similar quantity of nitro-glycerin, three or four times a day, is usually sufficient; to this may

be occasionally added 5-minim doses of tinct. digitalis or tinct. strophanthi. Ammonia, caffeine, and nux vomica often prove a good substitute. As the case advances towards recovery I have seen a mixture of citrate of quinine and iron, digitalis, and strychnine, given for short intermittent periods, do good service. Convallaria is highly recommended by Dr. Sansom.

It is now more necessary than ever to insist on the general principles of diet and abstinence from liquids which I have previously mentioned. *Massage* may now be used to improve the circulation, but it must not be used to hurry on the blood until the right side of the heart is relieved and the venous system depleted.

I have already incidentally referred to the effects on the liver and the great enlargement that organ undergoes, with subsequent contraction from cirrhosis, resulting from the chronic congestion. These effects are best obviated by limiting the amount of fluid ingested and so lessening the portal circulation, and by the regular employment of cholagogue cathartics.

The kidneys suffer in the general venous congestion, but in the early stages of the disease the arterial tension is good, and hence the renal secretion is free. When failure of the right ventricle with tricuspid regurgitation takes place, the arterial pressure falls, the onward current of the blood is diminished, and the urine correspondingly lessened. As the improvement takes place there is a return to the former condition of affairs, with restoration of the renal secretion. The indications for treatment, therefore, are to improve the state of the right ventricle and that of the left will naturally follow, hasten the circulation, and maintain moderate arterial tension. Diuresis is evidence of improved circulation, and shows that the cardiac tonics are having a good effect.

Bloodletting is a valuable auxiliary in the treatment of heart-disease, and is certain in the near future to be more generally used than it is at present. I rather regret to have to differ in some matters of detail from my sanguinary friends, but I think that the subject of bloodletting is one which admits of free discussion, so that accurate rules may be formulated for the employment of such a powerful weapon—powerful alike for good or evil—in the treatment of disease. We must have a clear conception of the conditions which are benefited by bloodletting, and how, in any given set of conditions, the abstraction had best

be performed. We must know why we bleed, when to bleed, where to bleed, and how much to bleed.

In reading the histories of cases cured, relieved, and supposed to be relieved by venesection, it is often very apparent that the operator has got a very inadequate idea of any elementary principles to guide his action. You may read of a physician opening the median basilic vein, and drawing off perhaps a pint of blood, in a case of very high arterial tension, with immediate and lasting benefit to the patient. In perhaps the next case in which he performs the operation the arteries are almost empty, and it is with great difficulty that he can withdraw a third of the former amount. Yet both he and the frightened patient may imagine that the bloody deed has been fraught with great relief, though very probably the death of the latter may show that there has been no lasting benefit. When the bleeding is limited to such flea-bites as a few leeches, or dry cupping over the liver or præcordia, there cannot be much harm done. I could never see the rationale of abstracting, say, ten ounces of blood from the arm and at the same time putting a pint of warm milk in the stomach. If physicians could only be taught to lessen the amount of liquid ingested in cases where the heart is overburdened with fluid, then venesection might often be dispensed with.

Some time ago I was asked to see a patient who was supposed to be suffering from angina pectoris. He was propped up in bed, and breathing was labored. There was great sense of oppression and pain about the præcordia, which caused him to be very restless, constantly tossing about and unable to get into an easy position. His countenance was anxious and distressed, he moaned and sobbed with anguish, cried for breath, threw his legs out of bed, and could obtain no relief. His liver was much congested, digestive functions disturbed, and bowels confined. His pulse was frequent, large, of good strength, full and bounding; all the veins were turgid, face dusky, mucous membranes livid, skin hot, and perspiring freely. He had been in this condition for about forty-eight hours, during which time he had had no sleep, and the case was now looked upon by those in attendance as well-nigh hopeless. He had been treated for two days with nitro-glycerin, nitrite of amyl, a liberal allowance of brandy, which induced thirst, and this was gratified by a free supply of liquids. I diagnosed the case as one of primary dilatation of the right ventricle from

overwork. As the arterial system was well filled and there was a free supply of blood from the lungs through the left side of the heart, I felt strongly inclined to relieve the right side of the heart indirectly through the lungs and systemic arteries by free bleeding from the arm. However, I decided to give the following method of treatment a trial first. At my suggestion, the alcohol, nitro-glycerin, and nitrite of amyl were stopped and the fluids were much diminished. He got 4 grains of calomel, followed by an ounce of sulphate of sodium, which was repeated after some hours. He soon experienced considerable relief, and towards morning had about two hours' sleep. He progressed very favorably, but before he was quite convalescent he was rather indiscreet in his diet and drink, which brought on a relapse. This was quickly relieved by the same method of treatment. He next got a mixture of caffeine and ammonia, afterwards digitalis and nux vomica, which again were replaced by strophanthus. He was put on a light dry diet, with only about one pint of liquid in the twenty-four hours. He was soon allowed to have exercise, which he was ordered to gradually increase, so that in a short time he was able to do a hard day's work. I have recently learned that he has since kept quite well and strong. I have not the slightest doubt but that bleeding would have done this patient good, but the removal of twenty ounces of blood from his arm would not have been a whit more effectual than the mode of depletion which I adopted.

Regarding nitro-glycerin and atropine (two drugs of which I have spoken highly in the treatment of mitral stenosis), I may say that I always prescribe them in small doses,— $\frac{1}{100}$  to  $\frac{1}{80}$  of a minim of the former and  $\frac{1}{160}$  to  $\frac{1}{100}$  grain of the latter,—sometimes separately and sometimes together, and the frequency of the dose is decided by the effects produced. When I hear of a dose of 10 minims of a one-per-cent. solution of nitro-glycerin having been prescribed, I suspect that there was something wrong with the drug. Sooner than adopt such a practice, I would try a few doses of the mixture on myself, and if the physiological effects were not produced I would change the druggist. I may also remark that in mitral stenosis it is not desirable to reduce the peripheral resistance too low, lest you produce worse effects than those you are trying to remedy.

I could cite numerous cases in support of the contentions in this paper, but it has already assumed such dimensions that I must forbear for the present.

*THE USE OF PILOCARPINE HYPODERMICALLY IN FACIAL ERYSIPELAS, WITH A REPORT OF CASES.*

BY JULIUS L. SALINGER, M.D.,

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Hospital, etc.

NO disease in recent times has undergone so many ineffectual changes in treatment as has erysipelas. It was hoped that, with the introduction of some of the modern drugs, such as antiseptics, antipyretics, etc., some agent would be found which would successfully combat the disease. Up to the present time the orthodox treatment by iron and its preparations, especially the *tincture* of the *chloride*, has been much in vogue. It can, however, scarcely be claimed that this treatment shortens the course of the disease, as uncomplicated erysipelas is a self-limited malady, which usually lasts from eight to ten days. A remedy, to be operative in a self-limited disease, must either shorten or powerfully influence its principal symptoms. Through the study of the pathology of erysipelas, especially the significance of its causative germ, and the knowledge of its distribution in the economy and the relation that the germ bears to the skin and the general lymphatic system, remedies should be used that have a local or specific action on these structures. It was for this reason that Da Costa introduced the treatment of erysipelas by pilocarpine hypodermically.

Pilocarpine, according to Brunton, stimulates the secreting nerves. In this way an enormous secretion of saliva from the salivary glands is caused. Large secretions of sweat, from its action on the sweat glands, are produced, beginning either in the face or at the point of subcutaneous injection, and thence extending over the whole body. The large amount of sweating produced causes a fall in the temperature, the secretion of sweat usually lasting two or three hours, and is often so copious that the body loses from one to two pounds in weight. Pilocarpine is *excreted* in the urine unchanged by the kidney (Brunton).

It is not the object of this article to call attention to the symptomatology or pathology of erysipelas, but merely to give the result of a number of cases treated exclusively by the hypodermic use of pilocarpine. The cases were not selected, but treated in a series, both in hospital and private practice, numbering, in all, twenty-eight. Of this number, twenty were

males and eight females, the ages ranging from twenty-two to seventy-six.

CASE I.—T. G., aged thirty-eight, black, laborer by occupation, was admitted to Philadelphia Hospital on June 6, 1893. Patient was well nourished and of medium stature. Casual examination showed the face to be swollen and cedematous, the eyelids being almost entirely closed. As the swelling extended upward over the head on both sides, it gradually lessened, but even at the base of the skull there was a boggy sensation on pressure. The swelling also gradually decreased as it extended downward over the face to the neck. Blebs were noticeable on the cheeks and forehead, and some of the cervical glands were enlarged. The margin of the eruption was raised and well defined; the nose distorted and the ears shapeless; the skin was hot to the touch. Physical examination showed the heart and lungs normal. The patient appeared dull and stupid, answering questions hesitatingly, seeming not to comprehend them. His wife said that two days before having been brought to the hospital he became engaged in a street-brawl, while under the influence of liquor. In the fight he received an injury above his right eye, which appeared to heal rapidly, but which later proved to be the starting-point of the erysipelas. On admission to the hospital, he soon became delirious; his temperature taken in the axilla was 104° F.; his pulse, 108, feeble, and thready; his respiration, 24. His face was dusted with bismuth subnitrate and a mask applied. He was given a hypodermic of  $\frac{1}{6}$  grain of pilocarpine. In three hours, noticing that no sweating had taken place, the hypodermic was repeated. The temperature fell slightly during the night; towards morning it again rose, and the patient became very delirious, attempting to get out of bed, and making considerable noise, etc. An examination of the urine showed specific gravity 1015; albumin was present, both by the ring and heat test, in appreciable amount; casts were not found. The hypodermics were given every four hours. After the third injection a small amount of sweating was noted. The delirium increased, and it was necessary to strap him down on the bed. On the evening of the next day the temperature dropped to 101° F. He fell asleep, and was much quieter during the night, although still slightly delirious; in fact, delirium was present for the next two days to a greater or less extent. During this time the sweating was most copious. On the fourth day a pseudocrisis occurred. The eruption, which had been gradually improving, had nearly disappeared.



On the night of the same day a fresh invasion of the disease above the right eyebrow sent the temperature up again. The hypodermics were again used; but two were given, and towards morning the temperature was again normal. He remained in the hospital a week longer, during which time the temperature remained normal. On the sixth day the inflammation of the skin over the face and scalp, which was most extensive, had entirely disappeared. Desquamation was quite marked over the inflammatory area. The albumin had entirely disappeared from the urine. This was the only treatment, with the exception of six ounces of whiskey, given in the course of twenty-four hours, in divided doses.

This, undoubtedly, was an exceptionally severe case, the temperature being higher, the delirium more marked, the eruption more extensive than in average cases. The quantity of albumin present was a guide by which to judge of the severity of the case, for although traces of albumin are present in ordinary cases, large amounts always signify extensive disease. The writer has reported a case (*Medical News*, July, 1891, "Renal Disease and Uræmia attending Acute Facial Erysipelas") in which lasting renal disease was the result of facial erysipelas.

Notwithstanding the severity of the symptoms in the above-quoted case, the disease lasted only six days, and the almost immediate amelioration of the symptoms was unquestionably due to the administration of hypodermics of pilocarpine.

Case II. shows a somewhat rarer form of erysipelas, and one which, under ordinary circumstances, is not so easily influenced by treatment.

CASE II.—S. S., white, laborer, native of Russia. A history could be obtained only with great difficulty, as the patient spoke Russian. On admission to the hospital his temperature was 103° F., his pulse 88, his respirations 36. He was a powerfully-built man, of fair complexion. When first seen, his face had a dusky, red hue, but there was no evidence of any present inflammation. Attached to his ears were pieces of dried, loose skin, as though they were remains of blisters. A circumscribed area of redness was visible in the left pectoral region, extending through the axillary space to the back. The dull color of the neck and shoulders and the particles of dry skin gave evidence of previous inflammation. Passing downward, the skin was seen to assume a much brighter hue, and was extremely hot to the touch. A distinctly marginate appearance, slightly elevated, was apparent. The pos-

terior surface of both arms was affected, this process extending towards the flexor surface and almost completely encircling the arm. Posteriorly, the process extended almost to the lumbar region; the familiar picture of erysipelas migrans was easily demonstrable. Physical examination gave no evidence of disease. He frequently brought the hand to the forehead, showing that he suffered greatly from headache.

He was given a hypodermic of  $\frac{1}{6}$  grain of pilocarpine. After the first hypodermic the temperature fell during the night, till at eight o'clock the next morning it was 97.3° F. The man had perspired very profusely. Later in the day the temperature rose to 99° F., but he seemed very comfortable. He had applied a paste of bismuth subnitrate and water to the inflamed area, which appeared to exercise a very beneficial influence. At first the man suffered from retention of urine, voiding none at all the first day, until after the use of the hypodermic, when a small quantity was passed. The urine contained traces of albumin; no casts. The next day he voided only eight ounces; by catheter twenty-seven ounces more were obtained. On the third day the quantity of urine was normal. The hypodermics of pilocarpine were given every four hours, there being usually a fall of from  $1\frac{1}{2}^{\circ}$  to  $2\frac{1}{2}^{\circ}$  F. after its administration.

The process extended almost over the entire anterior surface of the chest and over the arms to the elbows. The erysipelatous process improved at once after the administration of the hypodermics, and by the fourth day nothing could be seen except blebs and dry skin where the process had been. In this case there was no delirium, and, with the exception of headache, the patient seemed fairly comfortable. Indeed, the headache remained as a troublesome symptom for nearly one week after all traces of the inflammation had disappeared.

From the appearance of the face, ears, and neck of the patient it could be fairly assumed that the disease must have begun as one of facial erysipelas, and must have existed for at least a number of days before the patient's admission to the hospital. No trace of a wound or injury could be found.

The histories narrated above are each a type of severe erysipelas encountered mostly in hospital practice. In Case I. most likely the alcoholic history was in large part responsible for the amount of delirium present, for it is well known that when drunkards are attacked with acute diseases, delirium is always a prominent symptom.

In all the cases treated by this method (twenty-eight), the disease was comparatively severe. In none did the treatment last longer than eight days, and quite a number recovered in four days. Albuminuria, to a greater or less extent, was present in twenty-six cases, and lasted throughout the course of the disease. In the severest cases quite appreciable amounts could be obtained by the cold test with nitric acid. In none of the cases were tube-casts present. Four of the patients suffered from retention of urine.

The good results obtained by pilocarpine must be ascribed to its action on the skin and subcutaneous tissues. Perhaps the sweating induced by its administration opens a passage for the expulsion of the bacilli which are responsible for this disease. Certain it is that larger quantities of urine are passed and retention rapidly relieved by pilocarpine. The advantage of administering pilocarpine hypodermically is to be found in its rapid action. In order to obtain the best results, the full physiological action of pilocarpine must be produced; that is to say, that unless marked sweating, increased salivation, and increased diuresis are noticed, good results will be looked for in vain.

The only contraindications to its use would seem to be in cases of actual organic disease of the heart. Where cardiac disease is present, pilocarpine may have entirely too depressing an effect upon the circulation, nor would it be a safe remedy for old, enfeebled, and cachectic persons. When erysipelas occurs as a complication in another disease, pilocarpine has not shown itself to be effectual. It seems that, where erysipelas occurs as a secondary disease, the process is more severe. Hence so-called idiopathic erysipelas is the only form of the disease in which pilocarpine may be safely and advantageously administered.

#### ANÆSTHESIA. THE TECHNIQUE OF CHLOROFORMIZATION.

A PAPER PRESENTED TO THE SECTION ON THERAPEUTICS OF THE FIRST PAN-AMERICAN MEDICAL CONGRESS, HELD IN WASHINGTON, SEPTEMBER 5, 6, 7, AND 8, 1893.

BY ANGEL CONTRERAS, M.D.,

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to treat so important a subject,—a subject that can be elucidated by abler men only. I hope a discussion of the matter will tend to bring about a uniformity of opinion regarding the best means to employ in the production of anæsthesia without danger to human life.

Science seeks the discovery of a harmless anæsthetic. The best methods for the production of local loss of sensibility are at present occupying the minds of investigators.

The most powerful procedures wrought by the real progress of modern surgery, especially during the nineteenth century, may be said to be three,—anæsthesia, antiseptis, and hæmorrhage, this latter being the complement of the first two.

Soubeiran discovered chloroform in the year 1831 among the chemical products of the methylic series.

History tells us that on the 14th of October, 1846, Morton produced anæsthesia with ether before a large number of physicians and medical students in Boston, upon a patient from whom Warren removed an enormous tumor of the neck without causing the least pain. A year afterwards, Simpson and Flourens, in memoirs presented to their respective academies, proclaimed the anæsthetic properties of chloroform, and from that date the employment of this agent has become general, like everything else that is found really useful.

In the republic of Mexico, which I have the honor to represent as one of its delegates in this Congress, Dr. Miguel Jimenez made use of chloroform at that time for the production of anæsthesia upon soldiers who defended the independence of the country against the American invasion.

From its very cradle chloroform has been the rival of ether as an anæsthetic agent, and up to the present day one remedy has won no special victory over the other, a proof that both are good, although the observer generally praises higher that anæsthetic which he has most employed.

We Mexican physicians are in the habit of using chloroform almost exclusively.

At a height of two thousand two hundred and seventy metres above the level of the sea, at which the valley of Mexico is situated, ether is too volatile to be of much use, and, more than in other parts, special apparatuses are required for its administration.

It is generally admitted that chloroformization is obtained more rapidly than etherization; that its effects are more intense and durable; that the excitation produced is less; that the vapors of chloroform are not inflammable, nor do they provoke so much salivary

WE owe a debt of gratitude to the immortal names of Soubeiran, Simpson, and Flourens for the great discovery of anæsthesia by means of chloroform. I have thought it proper that these should be the first words uttered by me before this learned body, and I beg to be excused for any shortcomings in my endeavor

and bronchial secretion as those of ether; and that, finally, the latter remedy is apt to produce a tardy cardiac syncope, while the same phenomenon generally occurs, when it does come, at the very beginning of chloroform anæsthesia. It seems to me, however, that in order to establish a preference between the two agents, the percentage of mortality produced by each one of the two remedies should be taken into consideration; but here, again, serious difficulties are met with. The cases upon which the two anæsthetic drugs are used are not always of the same nature, and cannot therefore offer a basis which should be the starting-point for the formation of a more or less accurate opinion regarding the danger of either medicament. Again, chloroform appears to be more widely employed than is ether; and, finally, not all the unfortunate cases have ever been published. The percentage of death recorded so far, and attributed directly to the use of ether and chloroform respectively, becomes worthless, and from it no definite opinion can be formed as to the degree of danger peculiar to one or the other agent.

According to the researches of Arloing, it may be inferred that ether is preferable in certain cases,—that is, in those individuals suffering from disease of the right heart; while chloroform is safer for those patients affected with disease of the left heart, and, according to Duret, when there is present a simple ventricular atony. Some practitioners believe that in cases of strangulated hernia ether should be preferred, from the fact that chloroform has a tendency to cause pulmonary hypostasis and a dangerous dyspnea.

I will not dwell on how chloroform acts, neither will I endeavor to explain the phenomena produced by the drug, with reference to the abolition of the functions of the cerebrum, medulla oblongata, and spinal cord, bearing in mind that the science of chloroformization consists mainly in one being able to give a sufficient amount of the remedy to cause loss of sensibility, without producing paralysis of the heart or the respiration.

It cannot be denied that any time during the process of chloroformization sudden death of the patient may supervene.

It was at first believed that ether was exempt from causing this fatal issue, and it is said that Hayward travelled all over Europe bent especially on the discovery of a single death produced by that anæsthetic. But time has shown that not only one but several cases of death have occurred under the administration of ether.

Reputed authorities, like Sedillot and Gosselin, have affirmed that pure chloroform, carefully administered, is incapable of causing death. But I believe that the consensus of opinion at present is that, notwithstanding the purity of chloroform and the ability of the anæsthetizer, a fatal issue may take place.

It has also been established that death may occur under circumstances traceable to the mode of administration of the anæsthetic, and hence the importance attached to the technique in the application of chloroform. To this technique I wish especially to call attention, since each one of us, as a rule, will follow the procedure towards which he is inclined or to which he has been accustomed. As showing that death under anæsthesia is exceptional, I remember having read that Billroth met with a single fatal case out of twelve thousand five hundred individuals anæsthetized with chloroform. It is, therefore, of the utmost importance that eminent practitioners, surrounded by the halo of a vast experience, should endeavor to establish the best means of producing anæsthesia without danger to the patient.

For a long time, I believe, the method of interrupted inhalations and strong doses was generally employed. One or two grammes of chloroform were poured into a common cone, this being placed over the nostrils and mouth of the patient, allowing at the same time a free access of air. The cone was gradually brought nearer the patient, the quantity of the drug increased, this being renewed when the evaporation of the chloroform was thought to be complete. The cone was then removed for a short time, to be refilled with more anæsthetic and reapplied, the manœuvre continuing as long as it was believed to be necessary, so that the amount of the liquid and the time employed in the application of the interrupted inhalations were left to the discretion of the anæsthetizer.

The method of continuous inhalation was first proposed by Labbé in 1882. In this way the nerve-centres are not suddenly but gradually acted upon, and thus fatal accidents are largely avoided. Time and chloroform are also economized.

Dr. Miguel Cordero (died this year), of the city of Mexico, presented to the Academia Nacional de Medicina, in January, 1890, and in the same month of 1891, memoirs in which he advocated the method of rapid anæsthesia by chloroform inhalations. This method he had found of undoubted value in a large number of observations.

His procedure consists in a continuous inhalation, pouring the chloroform by drops over a handkerchief or any other piece of linen, which he never allowed to be taken away from the face of the patient, permitting, at the same time, a free access of air. Before the first few drops were completely evaporated new ones were poured over.

I will here transcribe the technique of Dr. Cordero, as described by him on page 122 of vol. xxv. of the *Gaceta Médica de Mexico*: "The apparatus is simple enough; there is nothing special in regard to its construction. Sometimes a layer of cotton fixed over a wire screen is used, sometimes Esmarch's apparatus. Usually, however, the simple cone made of coarse cotton linen, with a sufficiently large aperture on the top to permit free access of air, is employed. No cotton or any other material is placed within the cone; this is allowed to remain empty, and it is over the external surface of the cone that the chloroform is poured in small quantities at a time.

"When the first drops of the liquid are poured on the cone, this is brought over the mouth and nostrils of the patient, but without touching those parts, in order that the air may also find entrance in this way. These first drops produce upon the linen of the cone a stain which does not disappear until evaporation has completely taken place; but before this occurs (which it usually does in the course of a few seconds), new drops of chloroform are poured. The procedure is continued until the disappearance of the palpebral reflexes and complete loss of movement in the patient show that full anæsthesia has been established, when any operation can be performed without the causation of pain. If during the administration untoward phenomena are observed, no matter how slight, the inhalation should be stopped immediately. During the operation, under full anæsthesia, the administration of the agent should be continued as before, employing less quantities, and even adopting, under these circumstances, the interrupted plan until the end of the operation."

According to the observations of Dr. Cordero, no fatal result was recorded under the employment of chloroform by the above method. Anæsthesia was produced in from six to eight minutes, and the amount of chloroform used was 18.60 grammes. The average time employed in the operative acts was 18.6 minutes.

These results are very satisfactory when compared with those obtained by other methods of administration. They are especially worthy of attention, from the fact that in Mexico it was

noted, previous to that time, that with the use of chloroform in large doses, administered in an interrupted manner, a longer time was required to produce anæsthesia than in Europe with precisely the same method.

This difference gave rise to a spirited discussion. Some attributed such difference to the considerable height at which the valley of Mexico was situated, because, according to Dr. Ramos, who spoke before the Academia de Medicina, the rarefaction of the air enhances the evaporation of volatile liquids like chloroform, in which case, though an equal volume of air is inspired, a relatively less amount of the anæsthetic is taken in by the lungs. Others thought that the difference lay in the kind of chloroform used (although the agent generally preferred in Mexico is the one furnished by a certain reliable English firm); while still others attributed the phenomenon to the method employed in the administration of the chloroform. The observations of Dr. Cordero appear to sustain the latter opinion.

In the Hospital General of the State of Puebla, which, as Professor of Clinical Surgery, I have under my immediate charge, I have for the last few years employed the method proposed by Dr. Cordero, and been able to confirm his observations. In the same hospital one of my colleagues has also lately used the method of continuous inhalation; but in this instance he uses a larger amount of the drug, and applies the cone firmly over the mouth and nostrils of the patient, without allowing a free access of air. This modification is known among us under the name of "the method by assault." The two thumbs hold the superior angles of the cone against the cheeks, and the two index-fingers the inferior angles of the cone against the ascending rami of the inferior maxillary bone, this bone being, at the same time, pushed forward. The cone is never removed, while over it the chloroform is constantly poured, and in large amounts. The truth of the matter is that the results obtained by this method are rapid, and no excitement is produced even in alcoholic patients. Yet asphyxia and cardiac failure are to be feared during this procedure, since the susceptibility of the individual to chloroform can only be measured by the gradual administration of the drug.

Dr. Bolognesi, of Mans, has lately applied chloroform in small doses and by continuous inhalation, the patient being placed in an inclined plane of forty-five degrees. This method has been used especially in cases of laparotomy. So happy have been the results (particularly with regard to the cerebral congestion deter-

mined by this position) in the march and excellence of chloroformization, that the procedure of Bolognesi might become generalized in the practice of other operations.

According to that author, the congestive phenomena determined in the encephalic mass prevent the occurrence of cardiac syncope (this is the most dangerous accident to be feared during the administration of chloroform), while the respiration may be interfered with through mechanical phenomena, which can easily be obviated by the use of a tongue forceps, the propulsion of the inferior maxillary bone, and the employment of the inclined table.

Regarding the accidents produced by chloroform, I will only repeat here what my compatriot, Dr. Hurtado, has said briefly but to the point: "Only those phenomena which come on gradually can be combated and even avoided; but those which occur suddenly can rarely be dealt with in a satisfactory manner, since, as a rule, they give no time in which to prevent them, much less in which to combat them."

#### UNUSUAL MORBID GROWTHS IN THE NOSE AND MOUTH.

CLINICAL NOTES.

BY W. S. JONES, M.D.,  
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College Hospital.

**T**HERE are here recorded three cases, two of which were carcinomata of the turbinated tissues. To the date of this report there have been no signs of recurrence in either. This suggests that many cases may be curable if taken at the commencement of the disease, provided the growths are properly and thoroughly removed.

came partially closed. It extended over the malar bone. The right nostril was occluded, and finally completely obstructed. Marked epiphora existed. Examination disclosed occlusion of the nasal duct by a large growth, involving the inferior and middle turbinated bones. A portion of this growth was removed and examined by Professor Coplin, who pronounced it to be carcinoma.

One week later the cold snare was applied to as much of the growth as could be caught; it was made to cut through slowly, very little blood being lost.

Three days afterwards examination showed that a large part of the growth remained. This was too inaccessible for satisfactory snaring and too extensive for cauterization. I devised a curette to meet these conditions, which is shown in the cut. It has a sharp cutting edge. With this instrument all of the growth and a certain amount of the apparently healthy surrounding tissue were removed. Hemorrhage was severe, but stopped spontaneously. As soon as it ceased lactic acid was applied to the site of the tumor. Two more applications of acid were made during the next week, and the nose was washed out daily with peroxide of hydrogen. In two weeks after the operation the parts were healed. There was no recurrence up to the date of this report (eighteen months).

**CASE II.**—Mrs. S., aged forty-three. Lost her father from cancer of the stomach. Her symptoms were similar to those of the previous case. The right side was affected, and there was epiphora, together with occlusion of the nasal cavity. The operation was performed two weeks after the former case was subjected to radical treatment. The diagnosis was confirmed by the microscope. There was no return after one year.



While carcinoma and sarcoma are unusual affections in the nose, they occur with sufficient frequency to warrant the specialist making a careful search for them when symptoms and signs point to tumor formation.

**CASE I.**—*Carcinoma of the Turbinated Bodies.*—W. S., aged thirty-four, presented himself at the Out-Patient Throat Department of the Jefferson Medical College Hospital. His family history and his general health were good. Three months before applying he detected a small swelling on the right side of his nose. This increased in size until the right eye be-

**CASE III.**—*Ossifying Fibroma of the Alveolar Process.*—Miss R. H., housekeeper, aged thirty-six, applied to the clinic February 8, 1893. Examination disclosed a large, dense; thick growth which covered the entire area of the palatine processes of the superior maxillary and palatal bones and pushed back the soft palate. It extended from a thick pedicle which was attached to the alveolar process opposite the molar teeth of the right side.

The patient stated that she first noticed this growth ten years ago, when it was about the size of a Lima bean, and that it had ever since

progressively increased in size, without pain and without any particular discomfort, except lately difficulty in eating.

This tumor was found to have adapted itself to the shape of the bones, so that it much resembled the contour of the human ear. It was covered with healthy mucous membrane, and was very hard to the touch, feeling like bone. The exploring-needle showed that the tumor was hard upon its surface, but was soft in its interior.

On February 10 a twenty-per-cent. solution of cocaine was applied, and Professor Cohen removed the growth with the incandescent snare.

The fine wire of the electric cautery was passed around the pedicle and tightened, and then the current was turned on to a dull-red heat. Resistance at first was not great, but as the wire neared the centre of the growth this increased to such an extent that the wire, though of steel, was broken. Another and larger wire was applied, and then the tumor was easily cut through in about five minutes, care being taken to operate slowly.

The pedicle of this tumor contained bony spiculæ, which projected into the substance of the tumor for fully one-fourth of an inch.

The wound was treated daily for one week with a solution of pyoktanin, when the patient was discharged cured. This tumor has had no counterpart in my experience of ten years in the hospital.

#### THE ACTION OF THE HYDROCHLORATE OF SCOPOLAMINE ON THE EYE.

READ BEFORE THE NEW YORK STATE MEDICAL SOCIETY,  
FEBRUARY 7, 1894.

BY THOMAS R. POOLEY, M.D.,

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IT is the purpose of this paper to briefly summarize some of the observations already published in relation to this drug, and then to give the writer's experience with the same for the past six months.

In the *Klinische Monatsblätter für Augenheilkunde*, xxi. Jahrgang, February, 1893, Raehlmann publishes a paper, in which he says that A. Schmidt, of Marburg, first described this drug,—an atropoid alkaloid derived from the roots of the *Scopolia atropoides*, and which, like atropine, hyoscine, etc., belongs to the pharmacological group of the tropeines, and as such the instillation of a watery solution in the eye causes dilatation of

the pupil. According to Landenburg, scopolamine, as well as hyoscine, are contained in hyoscyamus, without being identical with the latter. It is rather isomeric with cocaine, but yields quite different integral products.

The preparation was given to Raehlmann by Professor Kobert, with the information that, after experiments on the lower animals by the internal administration of scopolamine, it showed an opposite effect to atropine, and that its influence on the cortex of the brain was not stimulating like that of atropine, but, on the contrary, retarded its action. (Later on I shall have some comments to make on the erroneous character of these observations.) These last-named qualities led to the expectation *a priori* that the local special effects of the new remedy would be different, especially on the conjunctival blood-vessels. Raehlmann, after using scopolamine both on normal and diseased eyes, came to the conclusion that as a mydriatic and antiphlogistic it surpasses all other tropeines, including atropine. In strength of mydriatic effect it resembles hyoscine closely. The remedy does not produce the disagreeable after-effects and double vision which, according to his observations, occur with hyoscine; but it possesses all the advantages which belong to hyoscine in comparison with atropine. He used it during a period of six months in all cases in which atropine is applicable, and also by way of comparison with atropine, and has found that scopolamine is, in many cases at least, equal to atropine, while in others it is its superior. According to Raehlmann, the property which will insure scopolamine an enduring place among ophthalmic remedies is that it can be used for a longer time in a solution equivalent to a one-per-cent. solution of atropine without producing the troublesome associated symptoms which so often make the continued use of atropine impossible. He further says—but this I do not believe—that it is well known that atropine, when used as an instillation for any length of time, disturbs the appetite. He has never seen this or similar effects from the use of scopolamine. It is only after very large doses of scopolamine that a feeling of dryness of the throat is produced, a symptom which occurs after a very moderate dose of atropine. The state of nervous restlessness, with or without reddening of the face and quick pulse, which is so often found in patients treated with atropine, never occurred after the use of scopolamine. In cases of incipient atropine-poisoning, or in an idiosyncrasy towards atropine, scopolamine renders, therefore, the best service, since it more than sup-

plants atropine in its local effect and completely obviates general effects.

In cases of iritis, episcleritis with infiltration of the sclerotic, etc., when atropine could not be any longer endured, when the powers of the body were depressed on account of want of appetite, and the general condition of the body was as unfavorable as possible, scopolamine not only improved the eye-disease, but also the general health. The remedy surpasses atropine in its influence on peri-corneal injection, and possesses special advantage in suppurative keratitis, serpent ulcer, and irido-cyclitis. As is known, under these circumstances, especially in suppurative keratitis, serpent ulcer, and irido-cyclitis, atropine is often inadvisable; but Raehlmann has found in five cases that scopolamine caused a diminution in the size of a hypopyon. Scopolamine seems to act far more favorably on suppurating tissues than atropine, probably through its effect on the blood-vessels. Scopolamine does not seem to elevate intraocular pressure, even if there is a pathological increase of tension. If there is a pathological increase of tension, the remedy can be borne; therefore it is an indispensable drug in inflammatory conditions, especially in iritis, when they occur in glaucomatous eyes. He has used scopolamine with advantage in several cases of chronic inflammation with secondary glaucoma. In one case of absolute glaucoma with great irritation, strong ciliary injection, and hyphæma, the pain ceased, the eye became quiet, and the blood disappeared from the anterior chamber under the influence of this drug. He has not tried it in acute glaucoma.

Hydrochlorate of scopolamine acts five times as powerfully as atropine. It paralyzes, like the latter, and in the same degree, the sphincter of the iris and the accommodation. The duration of the effect—one-fifth per cent. scopolamine compared with one per cent. atropine (whether homatropine or sulphate is not stated)—is about the same, perhaps somewhat shorter with scopolamine than with atropine. It is to be used in solutions of one to two *pro mille* (one tenth to one-fifth per cent.), which solutions correspond in dose to one-half- and one-per-cent. solutions of atropine; 6 to 7 drops may be used daily in an adult, or it may be used every fifteen minutes during one or one and a half hours. With children, correspondingly weaker solutions are to be used. It operates best when used in divided doses.\*

L. Bellarminow† also has some observations on the action of scopolamine, from which he draws the following conclusions, which are essentially the same as those entertained by Raehlmann:

Scopolamine is indicated for the same cases as atropine, especially to determine the anomalies of refraction and accommodation, owing to its marked effect on accommodation, which permits of a speedy and accurate determination; in addition, it considerably shortens the period of duration of paralysis of accommodation and mydriasis. Scopolamine is also preferable to atropine in cases of short attacks of inflammation of the cornea. In general, scopolamine has all the good effects of atropine without its bad qualities. The author, therefore, thinks scopolamine will soon replace atropine in the practice of ophthalmology. Merck‡ describes scopolamine hydrobromate as a salt of the alkaloid from *Scopolia atropoides*, similar in physiological action and use to atropine, but not causing dryness of the throat, nervous restlessness, or congestion of the face, as in the case of atropine; neither does it affect intraocular pressure. Its application as a mydriatic is in one-tenth- to one-fifth-per-cent. solutions, which correspond to one-half- to one-per-cent. atropine solutions.

It was shortly after reading these *couleur de rose* reports of the virtues of the new drug (August, 1893) that I began its occasional use, at first to determine whether it had any local anæsthetic properties, which I soon found it did not possess. I then began its use in all such cases in which we usually employ atropine. The preparation I first used—a one-fifth per cent.—was made by Merck. In all cases where instillations were used by myself or my assistant, Dr. W. J. Killen, this preparation was employed; but when it was prescribed the patients obtained the drug which was stated to have been Merck's preparation from a trustworthy apothecary.

As a mydriatic to determine the anomalies of refraction, my house surgeon has used it in a number of cases, which I will not weary the Society by reporting in detail, but I will briefly give the results. In some instances the instillations were made while the patient was in the hospital,—four times within an hour, or at intervals of fifteen minutes,—and then the examination was proceeded with. In every instance it was found that the effect had been to produce complete paralysis of accommodation, and that mydriasis was produced in from ten

\* Report on Therapeutic Progress, THERAPEUTIC GAZETTE; extract from the *American Journal of Ophthalmology*, July 18, 1893.

† *Wratch*, No. 17, 1893; abstract in the *Revue Générale d'Ophthalmologie*, July, 1893.

‡ The market report for December, 1893.

to fifteen minutes, but that it took about three to four instillations to complete the paralysis of accommodation. The completeness of the paralysis of accommodation was shown both by the inability to see in the near, and by the bringing out in the second examination the total amount of ametropia. The duration of the mydriasis and the paralysis of accommodation was from twenty-four to forty-eight hours,—about the same as homatropine, but much shorter than that of sulphate of atropine. One remarkable result observed by Dr. Killen in several cases was a notable diminution in the visual acuteness after the full effect of the drug on accommodation,—*i.e.*, the correction of the ametropia did not bring the vision to the normal standard.

In three cases, all of them occurring in patients who had bought the drug themselves and used it at home, very marked toxic effects occurred. One of them is so remarkable that I shall take the liberty to report it in full. It happened in a girl of about thirteen years, in whom there was a history of convalescence from nephritis following an attack of diphtheria and cardiac palpitation. These facts, however, did not come to light until after the drug had been used. On January 29, 1894, she came to the clinic, having used the solution of scopolamine (one-fifth per cent.) six times in each eye, when the most alarming symptoms set in: the child began to stagger, talk in a thick, drunken, and foolish way, and at times seemed out of her head, and was very dizzy. At the clinic the pupils were found to be widely dilated, there was constant working of the lips and muscles of the face; the pulse was very rapid,—120 to 130 per minute,—and the heart's action very irregular and rapid. She had a staggering gait, which did not allow her to walk without assistance. She complained of needles under her feet on standing; she said there was dryness of the throat, but there was no erythema of the face. She was kept in the hospital for three hours before she was able to go home. She was given half an ounce of brandy two or three times. Two days later the mother brought her back to have the examination of the eyes completed. She said that all that night the girl raved and was out of her head, and it was only two days after the use of the drug that she seemed to have fully recovered. Two other cases came under notice only a day or two later, both occurring in healthy adult females, in whom the symptoms were the same, but less in degree. In addition, both of these complained of dryness of the fauces. Here, too, the toxic symptoms did not pass off

before twenty-four hours in one case and in the other forty-eight hours. In all of these cases, as the drug was given to be used at home, and a larger quantity prescribed than was needed, more than one drop may have been used, and it may even have run over the face into the mouth. At all events, it seems significant that these symptoms occurred only when the drug was used by the patients themselves. The number of instillations, too, were more than were used at the clinic.

The other cases in which I have used this drug have been mostly in ulcers of the cornea of different types. In one case of serpent ulcer, just the kind in which it is said to be so efficacious, it was noted that scopolamine was used for two days, but the eye was so irritated by it that atropine had to be substituted. In all other affections of the cornea in which it was used there was a very beneficial effect noted, especially so in one case of suppurative keratitis of traumatic origin, in which the healing occurred in a few days. In quite a number of cases of phlyctenular keratitis, too, it acted very promptly. In one case of kerato-iritis the mydriatic effect of the drug was very quick, marked, and satisfactory. I have not yet tried it in cases of iritis of severe type, or in any case in which there was a tendency to increase in intraocular tension, and consequently cannot confirm or deny the very important observation made by the authors quoted, that it does not increase intraocular tension. If this shall be confirmed, however, by future experience and observation, we shall have a drug of inestimable value in ocular therapeutics. I am anxious, too, to try it in cases in which atropine produces the severe form of conjunctivitis which we call "atropine-poisoning," for, from the positive statements made, we may hope that it will not only supersede atropine in these cases, but will also have a favorable effect on its cure when it has already occurred.

My conclusions, then, from my brief trial of scopolamine are: That it is of value as a mydriatic and cycloplegic in the examination of anomalies of refraction; that its action is more complete than homatropine and of about the same duration, and better than sulphate of atropine, because its effects pass off sooner; that it is open to the objection, if my observation should be confirmed by wider experience, that it produces toxic effects oftener than homatropine, in spite of statements to the contrary; that the temporary amblyopia sometimes induced does not seem to be of much moment; that in cases of short attacks of inflammation of the cornea, especially



in some of the suppurative type, it is of special value.

The tendency of the profession to vaunt the therapeutic value of a new drug is well known, and many instances in which those who were loudest in their praises of it soon became equally pronounced in their condemnation must occur to all of us. That scopolamine, as we have quoted from one of the authors, will soon replace atropine in the practice of ophthalmology is not so well assured, but that it may prove a very valuable addition to the list of mydriatics which we now have seems to be altogether likely, and we await with interest further details of experience and observation from our colleagues.

#### THE USE OF METHYLENE BLUE IN MALARIAL FEVER.

We have already published in previous numbers of the THERAPEUTIC GAZETTE interesting abstracts of the employment of this substance in paludal disease. In the *Indian Medical Gazette*, MARSHALL and GEE contribute a short article upon this subject.

During the past two years they have made an extensive trial of methylene blue in the treatment of malarial fevers, on both European and native cases, and from the results obtained are of opinion that in many cases it is a valuable remedy, and that its therapeutic properties deserve wider recognition. Ehrlich has used the drug in a few cases in Germany, and found that the development of malarial plasmodia in the blood was arrested and their number quickly reduced by its administration.

The dose used by the writers in all cases was 2 grains, given as a pill in combination with extract of gentian or hyoscyamus, the latter drug being indicated in cases where the exhibition of methylene blue was followed by symptoms of irritation of the bladder and rectum. One pill was given every two hours, with a maximum number of five during the day.

They found, as a rule, that after the temperature had fallen to normal the amount given could be decreased daily and finally discontinued about the fourth day; also that it was seldom necessary to administer the maximum amount for more than three days.

Their experiments with methylene blue have all been made in Beloochistan, where the prevalent fever is of a type peculiar to itself and is not generally ushered in by a cold stage, the onset of fever being usually sudden and manifested by rapid rise of temperature, accompanied with headache and muscular pains,

pyrexia usually continuing for several hours and the sweating stage not marked.

In these cases quinine and antifebrin frequently fail to check the progress of the disease; while, on the other hand, the administration of methylene blue is often followed by most satisfactory results, the temperature falling to normal in a few hours, and the progress of the disease in many cases being completely arrested.

In some cases of remittent fever, characterized by persistent high temperature and unaffected by the ordinary remedies, the results obtained by the use of methylene blue were immediate and lasting, but in other cases of the same character it did not produce any beneficial effect.

The use of this remedy is occasionally followed by more or less marked symptoms of irritation of the bladder, and also, in a few cases, of the rectum, which can usually be combated by the exhibition of hyoscyamus and potassium bromide, though in two cases the vesical irritation was sufficiently severe to cause retention of urine. The most striking and immediate result of a dose of methylene blue is the change in color of the urine, which generally within two hours assumes a deep blue; in cases where vomiting occurs the vomited matter is also deeply stained; patients are often much alarmed by these appearances and should be forewarned. As the result of their clinical investigations on this subject, they have arrived at the conclusion that, though not a specific in all cases of malarial fever, we possess in methylene blue a therapeutic agent of great value in many cases which resist the ordinary methods of treatment, and deserving a more extended trial, which, we trust, it may receive at the hands of some of the readers of this journal.

#### THE MICROBICIDAL ACTION OF GAL- LANOL.

P. CAZENEUVE, ROLLET, and NICOLAS (*Lyon Medical*) have studied experimentally the microbicidal action of gallanol, drawing the following conclusions:

1. Gallanol in excessive quantities completely arrests the life of micro-organisms.

2. Gallanol in weak solutions (.1 in 100) arrests or diminishes the vegetability of some microbes, leaving other germs intact.

3. Gallanol in very weak solutions (2 in 10,000) does not arrest the vegetability of micro-organisms, although their pathogenic power is almost wholly destroyed.

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## Leading Articles.

### THE UNTOWARD EFFECTS OF HYOSCINE IN ACUTE ALCOHOLISM.

UPON the introduction of hyoscine as an hypnotic in 1885 it was hoped that its sphere of application would be very wide, and that it would influence a large number of obstinate cases of insomnia in various types of disease where other older remedies had failed. The experience which has been gained year by year in regard to its influence seems, however, to show us that its sphere of usefulness is exceedingly limited. Even in the type of cases for which it has been most highly recommended it frequently fails,—namely, those of acute mania,—and in many other instances of insomnia associated with fever, doses which are large enough to have any effect whatever simply increase or produce delirium. In the insomnia following acute alcoholism it was thought at one time

that hyoscine would prove of value, but cases are continually occurring in which the administration of the drug has produced such symptoms that it is evident it should never be used for this purpose. In our experience the most alarming but apparently ultimately fortunate symptoms have been developed in the nervous excitement following debauch; and in the *Medical Record* for July 29, 1893, Fiske reports a case in which he administered hyoscine to a patient of about forty years of age. He was exceedingly nervous, sleepless, and restless. His articulation, which, prior to the use of the drug, had been clear, became exceedingly husky and indistinct. His walk became tottering, and finally he fell. His speech was confused and difficult. Sleep never came to his relief. The respiration was slightly irregular, labored, and the entire effect of the drug was distinctly unfortunate. It is only just to the drug, however, to state that Fiske administered too large quantities; while he administered  $\frac{1}{100}$  of a grain hypodermically as the first dose, he administered other doses hypodermically as much as  $\frac{1}{10}$  of a grain. This latter dose is so enormous for this powerful drug that we do not wonder that he developed additional disagreeable symptoms after its use. In one of the instances in which we employed hyoscine in such a case the nervous excitement of the patient amounted almost to mania, and created so much alarm among his friends that the physician was at once sent for and implored by both the patient and the friends never to administer such a remedy again.

### SHALL ANÆSTHETICS BE GIVEN TO THOSE SUFFERING FROM HEART-DISEASE?

OUR attention has been called to this important subject by a brief article in the *New York Medical Journal* of October 14, 1893, in which Dr. Giffen, of Nebraska, concludes that the presence of valvular cardiac disease does not contraindicate the employment of these substances. We are firmly convinced that not only does valvular disease not contraindicate the use of anæsthetics, but, on the other hand, there is even greater reason for their employment in persons so afflicted than in those who are in ordinary health. The shock of the operation and the struggling from pain are both of them factors which will more seriously affect the heart than will any anæsthetics if cautiously administered, and those who have had the most experience as anæsthetizers are able to recall

many instances in which patients with heart-disease have taken the anæsthetic quite as well as those who have not had this trouble. Even if a valvular disease is associated with well-marked atheromatous changes in the blood-vessels and corresponding cirrhotic processes in the kidney, we believe that anæsthetics are preferable to no anæsthesia when operations are necessary. While it is true that ether, at least, distinctly increases cardiac action and arterial pressure, this increase is rarely sufficient in degree to do any harm. Chloroform is probably, in most of these instances, the safer anæsthetic in one respect,—namely, that it rarely produces the early stages of struggling which are often so characteristic of ether; but, on the other hand, any suspicion of fatty or other degeneration of the heart-muscle should force us to the employment of ether rather than chloroform. Auscultation of the heart will generally give us some indication as to the character of these cases. It will indicate whether the patient has accompanying his valvular lesion marked cardiac dilatation and enfeeblement of the heart-muscle. A therapeutic point to be remembered is not that the loudness of the murmur contraindicates the employment of an anæsthetic; it is the condition of the heart-muscle which must be taken into consideration. If the apex-beat is almost indistinguishable and the second sound muffled and feeble, if percussion indicates that marked dilatation is present, even if the murmur is heard with difficulty, we believe that the contraindication to the anæsthetic is very positive,—so positive that it should not be administered nor the operation undertaken without the physician impressing upon the patient and his friends that grave danger exists. On the other hand, the evidence of cardiac hypertrophy, as shown in the forcible impulse of the heart against the chest wall and the sharp sounds of the aortic valves, will indicate that anæsthetics can be given almost with the safety which is present when healthy men are anæsthetized.

#### POISONING WITH BISMUTH.

MANY years ago bismuth was supposed to be a poisonous substance; later researches proved that the toxic symptoms induced by its too frequent use were due to the presence of contaminating arsenic. A change in the source of supply of most of the bismuth of commerce, this new source not being contaminated with arsenic, soon proved that this last supposition was correct. Again, a few years

ago some French investigators proved that, when taken in very large doses for long periods of time, or when applied as a dressing to a large denuded surface, chronic bismuth-poisoning supervened, black gangrenous sloughs forming in the intestine and general evidences of cachexia developing. In view of these partly contradictory facts, the case reported in the correspondence columns of the *New York Medical Journal* of January 20, 1894, by N. L. Wilson, is of value.

A German girl, aged fifteen years, of nervous temperament, received a burn of the third degree on her back, covering an area of sixteen by fifteen inches. Nearly two months after the accident she was admitted to the hospital. During that time no history as to her treatment is available. On admission, the burned surface was scraped under anæsthesia, cleansed with a 1 to 3000 bichloride solution, and dressed with Squibb's subnitrate of bismuth. The dressing was applied every second day. At the end of eight days a black line along the margin of the gums of both jaws, headache, nausea, vomiting, paleness of the countenance, elevated temperature, rapid pulse, and an odor of urine on the breath asserted themselves. The urine contained a small amount of albumin. There was cedema of the lower extremities and marked diarrhoea, which continued until her death, which occurred eight days later. Tests made for lead and arsenic as contaminating substances in the bismuth gave negative results.

We therefore have a practical illustration of the correctness of Villejean's observations upon the lower animals when bismuth was used for a dressing, and the interesting clinical point is established that this substance possesses toxic powers in man as well as in the lower animals.

#### PEROXIDE OF HYDROGEN IN THE TREATMENT OF CONJUNCTIVITIS.

AT this season of the year numerous cases of acute catarrhal conjunctivitis distinctly contagious in character and sometimes giving the impression of an epidemic influence manifest themselves. Practically a self-limited disease, usually disappearing under moderate applications of astringent substances and irrigation with mild antiseptic lotions, typified by a saturated solution of boracic acid, this inflammation occasionally assumes a subacute character, and persists in spite of the ordinary methods of treatment.

At all times conjunctivitis, which appears in

manifold ways, may become an exceedingly troublesome affection, often recurring or relapsing with singular persistency. Sometimes such relapses are due to constitutional disturbances, sometimes to improper use of the eyes, especially under the influence of the strain of uncorrected ametropia, sometimes to associated naso-pharyngeal conditions, sometimes to occupations exposing the patient to irritating vapors, but very often because some of the layers of the inflamed conjunctiva have not been quite freed from the primary inflammation, exactly as the remnant of an iritis in the form of a synechia may occasion a relapse in an eye which otherwise has assumed nearly normal characteristics.

Now, the failure entirely to rid the numerous folds of the conjunctiva from the influence of that form of inflammation to which the general term conjunctivitis is given depends, in most instances, upon failure to properly cleanse the surface and prepare it for the curative applications. Very few, unless specially engaged in ophthalmic work, appreciate how large a surface the conjunctiva possesses, folded, as it is, on the under surface of both lids, and turning upon itself deep down in the upper and lower sulci, to be reflected upon the globe. Probably any of the well-known lotions would be effectual in performing this cleansing process, provided definite exposure is attained. One substance has in the hands of some surgeons seemed to fulfil this indication in a singularly happy manner,—namely, the peroxide of hydrogen,—which seems to have the faculty of penetrating the crevices readily and flushing out in a most effectual manner all of the little grooves in the much-folded membrane.

Originally recommended by Landolt in serious types of conjunctivitis, not now under consideration,—for example, those of gonorrhœal origin,—it has from time to time been re-advised, and is, no doubt, still the chosen lotion in the hands of numerous surgeons. Quite recently this drug has received the hearty commendation of Lautenbach in a paper before the County Medical Society of Philadelphia on "The Treatment of Various Forms of Conjunctivitis." Starting out with the important proposition that the treatment of all cases of conjunctivitis must begin by the cleansing of the conjunctiva, not simply its ocular or palpebral portion, but the whole of the membrane, including the folds, and that this necessity exists with acute as well as with chronic cases, he believes, on the basis of nearly ten years' experience, that peroxide of hydrogen fulfils more

effectually than other drugs this important indication. His method is as follows:

From 10 to 30 drops of the solution, which he uses in full strength, should be instilled at the outer canthus of the eye, and with the fingers a degree of massage applied over the entire surface of both eyelids. Then the eye should be looked at, and, if necessary, a second, a third, or even a fourth application should be made. In trachomatous cases it is advised that after the application the lid should be everted and its surface rubbed with the rubber end of an eye-dropper. After the application of the peroxide, the conjunctival cul-de-sac should be thoroughly irrigated with a saturated solution of boracic acid for the purpose of washing out the *débris* and soothing the irritation which follows the application. This treatment is never intrusted to the patient, but performed by the surgeon himself, once or twice a day, or perhaps only a few times a week, according to the indications. Very occasionally he prescribes for home use a weaker solution of the peroxide, to be used once or twice a day, the strength not to exceed a three- to eight-volume solution. Having thus thoroughly cleansed the inflamed surfaces, they are in a condition to receive whatever application is necessary to secure healing, be this astringent or cauterant, according to the exigencies of each case.

Dr. Lautenbach is fully aware of the fact that peroxide of hydrogen used in this way produces much smarting, and, if an improper preparation is employed, is capable of occasioning violent pain and even interfering with the nutrition of the cornea. Therefore certain requisites are needed before this somewhat heroic detergent application is suitable,—namely, that the peroxide should test beyond ten volumes, that it should not lose its oxygen on slight changes of temperature, and, most important of all, that little or no free acid should be present, only such amount being permissible as is consistent with the stability of the preparation.

Dr. Lautenbach's observations are interesting because his experience with peroxide of hydrogen is much more favorable than that which has come to many who have attempted to employ this drug for similar purposes. No doubt his explanation is the correct one, and that where great and serious irritation has followed its use, as has happened not infrequently to the writer of this article, undue amounts of free acid have been the cause of the untoward effects. The uncertainty of always obtaining a preparation fit for such cleansing purposes has led to a method already referred to in these

columns,—namely, the complete eversion of both lids and the thorough exposure of the inflamed conjunctiva, which is then cleansed by means of a spray of warmed boracic-acid solution, to which a few grains of common salt have been added, this spray being generated with the aid of an ordinary air-condensing apparatus, the pressure of which is so regulated that no tearing of the mucous membrane is possible, and yet all crevices and folds are sought out and receive the finely separated particles of the liquid.

Too much attention cannot be directed to the important practical point of Lautenbach's communication,—namely, the thoroughness of the exposure of the conjunctiva, and, as already pointed out, failure to effect this means in many instances failure to cure the affection under treatment. We are not prepared to endorse full-strength solutions of peroxide of hydrogen, but neither are we prepared to condemn them, because, in the light of the experience just related, care in the selection of the proper solution may obviate the difficulties which have heretofore seemed to make it an objectionable preparation.

#### *TREATMENT OF SWEATING FEET.*

THAT excessive sweating of the feet is to some extent a neurosis cannot be doubted, since the dependence of the condition upon innervation is shown by many phenomena, such, for instance, as unilateral sweating. The paresis of the nerves in the case of sweating of the soles and palms is probably peripheral and dependent upon either alterations of cold and heat, or, in accordance with more modern therapeutics, is associated in some way with increased thickness of the epithelial or horny layer of the skin, since removal of this horny layer is frequently followed by a radical cure. When the feet are affected, the sweating is confined to the soles and to the skin covering the plantar and lateral aspects of the toes. It begins towards the posterior plantar surface of the heel, usually of both sides at about the same time. The patch formed is rather clearly circumscribed, and presents a sodden, grayish-red appearance while the shoes and stockings are worn, but after the feet have been bare, as after a night's rest, appears glazed and reddish; it spreads over the entire sole, and is often distinctly inflammatory in type, making the feet so sore and tender that walking is painful. The affection is rendered still more distressing from the fact that it is often accompanied by a most offensive and penetrating odor.

The cleanliness of the foot-clothing is of course a matter of prime importance. Soft woollen stockings are usually considered best, and shoes of thin leather, which allow of some evaporation.

Hebra, in the treatment of this affection, has been particularly successful. He makes an ointment by melting diachylon plaster over a gentle fire and adding an equal weight of linseed oil, stirring well.

The foot, after being carefully washed and dried, has inserted between the toes pieces of lint covered with the ointment, and is then wrapped in a piece of linen spread with the same preparation.

Stockings and thin, low shoes are then put on. The dressing is repeated twice daily, the foot being thoroughly wiped each time. In a few days there is an exfoliation from the affected regions of a thick layer of cuticle, leaving a healthy skin below. After this has come away, astringent, drying dusting powders are continued for some days or weeks. The cure is generally accomplished in less than a month, and even should there be a relapse, this yields readily to repeated treatment.

During the last ten years the following methods, either single or combined, have been those of preference: Efforts towards lessening the sweat secretion by so arranging the footwear that rapid evaporation is provided for; the application of chemically drying materials; the thorough removal of the horny layer on the sole of the foot by Hebra's method, or by certain antihydroic solutions.

The management of the footwear should receive the most minute attention. It is of cardinal importance that shoes should fit properly and should not make pressure sufficient to interfere with the circulation. The upper of the shoe should preferably be made of some woollen stuff rather than leather, and low shoes are particularly commended for women. Gum shoes are especially to be avoided. Singularly enough, Jäger highly commends patent-leather shoes, though every one who has worn them well knows that to a limited extent they produce very much the effect of gum shoes. Cork soles, double stockings, and all other means of adding warmth to the feet are strongly condemned by Neebe. The fact that perfectly comfortable shoes will not necessarily relieve this affection is shown by the statistics of the German soldiers, sixty-seven per cent. of whom suffer from sweating feet.

The chemically drying materials have received the warmest commendations from all those who have practically tried them. Among

these the most valuable are combinations of alcohol with tannin or naphthalin; or powders, among the best of which are salicyl talc, salicyl-tannin starch, powdered tartaric acid, and, by no means of least importance, sulphur; or solutions, such as five- to ten-per-cent. chromic-acid lotion, or chloride of iron with glycerin.

The popular method of the day is, perhaps, the local application of a five-per-cent. solution of chromic acid, followed by the compound talc powder. Powdered tartaric acid is useless.

These methods, however, have never been entirely satisfactory. They improve the condition, but do not cure it. Hebra's method made a new departure in the therapeutics of this affection, but it requires too much attention to detail, is slow, and often fails.

Neebe therefore made an effort by means of hydrochloric acid to accomplish the same result, and after fifteen years of faithful trial with the raw acid, finds this agent entirely satisfactory.

The method of application should be followed closely. When the feet are galled or very tender, especially in hot weather, treatment is preceded by an eight- to ten-days' application of salicyl talc or compound talc powder, which is sprinkled in the stockings. The application of the acid is best made in the evening. The crude hydrochloric acid is poured into a flat vessel of stone or glass or porcelain, sufficiently large to receive the two feet. Since the soles of the feet and the skin between the toes are the seat of the trouble, sufficient hydrochloric acid is poured in this vessel to completely cover the soles. It should not be allowed to come in contact with the skin of the back of the feet. The heel is kept in the solution for five minutes; then the sole of the foot for ten minutes. After this the feet, especially the skin between the toes, are washed in soap and warm water. Soaking in the acid must be at once stopped as soon as pain is excited, and the painful spots must be coated with ointment until healing is complete. The crude acid gives rise to extremely pungent vapors, which irritate the throat. These may be avoided by breathing through a wet sponge or towel.

Applications are repeated twice weekly and continued for five to eight weeks. Patients usually express the fear that this raw acid is much too strong. This, however, is not the case, although, if the patients are extremely nervous, they may be allowed to add twenty-five per cent. of water, but after the first application to continue with the crude acid. The

author holds that with a quart of hydrochloric acid every physician is in a position to cure even the most obstinate case of sweating feet. Should there be a recurrence, cure is even more rapidly accomplished than in the first case.

Patients who will not consent to this treatment may be treated as follows: Every morning the soles of the feet and the skin between the toes is painted with a ten-per-cent. solution of nitrate of silver. This is continued until the whole horny layer on the soles and between the toes exfoliates. After one complete exfoliation, taking from eight to fourteen days, the remedy is applied only occasionally. This treatment is better than that with chromic acid. Practically, any method which accomplishes a thorough exfoliation of the superficial skin layers of the sole will give satisfactory results. It is important to note that cure of this affection is not only desirable because of the inconvenience it causes, but because it is a frequent cause of congestion of the mucous membranes, particularly those of the respiratory tract. Thus, many cases are recorded in which with the cure of the sweating feet the chronic catarrhal troubles from which the patients previously suffered disappeared. Even chronic catarrh of the stomach has been cured by this means.

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## Reports on Therapeutic Progress.

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### THE TREATMENT OF DIPHTHERIA.

*Apropos* of the recent publications of Escherich upon the local treatment of diphtheria by corrosive sublimate, A. DAMIANO (*Archiv. Ital. di Laringologia; Rev. Internat. de Bibliograph. Médicale*) calls attention to the practice of his teacher, Massei, who, in 1875, recommended spraying of solutions of bichloride of mercury (1 to 1000) in the treatment of diphtheritic angina. The recent bacteriological researches on the subject appear to sustain this practice, proving that the bacilli of diphtheria may be destroyed by corrosive sublimate in the strength mentioned. Experience seems to show that no danger need be feared from the employment of this method. At each spraying a larger quantity than 6 cubic centimetres should not be used. If the treatment is applied eight times in the twenty-four hours, the total dose of the medicament employed will not go beyond 5 centigrammes of the bichloride. The child, therefore, will never swallow more than a very minute quantity.

*THE PHYSIOLOGICAL ACTIONS OF THE  
SUBSTITUTION PRODUCTS OF  
GUAIACOL.*

According to the studies of PIO MARFORI (*Archiv. de Pharmacol. e Therap.; Rev. International. de Bibliograph. Médicale*), the general action of the monatomic compound radicals is that of *paralysis* after a short period of excitation. The toxicity diminishes from methylguaiaicol to ethylguaiaicol, and to allylguaiaicol, which is but slightly active. No convulsions are produced, as in the case of guaiaicol itself, which contains one hydroxyl, and particularly with pyrocatechin, which contains two hydroxyls. There is, therefore, a gradual transformation in the action of these substances by the substitution of the alcohol radicals for the hydroxyls, to which may be attributed the convulsant properties. The ethyl group gives to ethylguaiaicol its hypnotic properties. All these derivatives, in doses of .25 gramme per kilogramme of the body-weight, produce a slight reduction of the temperature. With the same dose, guaiaicol itself, and especially pyrocatechin, act very decidedly. In regard to the arterial pressure, the results obtained may be explained by the hypothesis that an hydroxyl imparts to the molecule the property of diminishing the pressure (pyrocatechin), the methyl ( $\text{CH}_3$ ) that of elevating it (methylguaiaicol). The other two alcohol groups, indifferent in themselves, influence the arterial pressure when they take the place of the action of the hydroxyl. Methylguaiaicol (or veratrol) is changed in the organism, in great part into guaiaicol, and is eliminated through the urine in the form of guaiaicol-sulphuric ether; a small portion passes unaltered through the kidneys. Ethylguaiaicol is also eliminated as guaiaicol-sulphuric ether. Allylguaiaicol is not much changed, and is found as such in the urine. The general action of the biatomic radicals is that of paralysis. The methyleneguaiaicol and the ethyleneguaiaicol are less poisonous than trimethylene- and propyleneguaiaicol. Benzoylguaiaicol, which belongs to the aromatic series, is transformed in the organism, partly into guaiaicol, which passes into the urine in the form of guaiaicol-sulphuric ether. Being inodorous, insipid, and non-caustic, it may be recommended as a substitute for guaiaicol itself.

*THE DYNAMOGENIC EFFECTS OF  
BLOOD-SERUM.*

A. CORIVEAUD (*Journ. de Médecine de Bordeaux*) details three interesting cases in which

the injections of blood-serum from the dog gave excellent results. The cases were, respectively, a rebellious anæmia, a chronic bronchitis with congestion of the base of the right lung, and a chlorosis due to mitral disease, accompanied with the most serious symptoms, such as vertigo, lypothemia, etc. All these cases made a complete recovery, and the author believes that there is no doubt as to the dynamogenic power of blood-serum. The injections appear to have the disadvantage of producing certain untoward effects, especially urticaria. The author believes that the method should be employed not as the primary treatment, but as a last resort in certain cases of profound anæmia, of prolonged convalescence, of phthisis, of neurasthenia with loss of power, —in all those cases, in fact, in which it is the main endeavor to infuse new energy into the organism. The injections of blood-serum should be practised preferably, according to the author, in the post-trochanteric region, by means of a long needle, being careful to deposit the liquid in the subcutaneous cellular tissue. Antiseptic precautions should in all cases be strictly observed.

*THE ANTIPYRETIC ACTION OF GUAIACOL.*

It has been held by several observers, particularly by Bard (see the reports on the subject in previous numbers of the *GAZETTE* during 1893), that guaiaicol locally applied diminishes the temperature mainly by being absorbed through the skin. How the drug acts to cause this remarkable reduction of the bodily temperature, when simply applied locally, has been studied in an interesting series of experiments by L. GUINARD (*Bulletin Générale de Thérapeutique*). The results of his experiments lead the author to conclude in general that the reduction of the temperature following the local application of guaiaicol, no matter to what region of the body it is so applied, is *not* the result of the absorption of the medicament through the skin. In many of the experiments performed, the rapidity with which the remedy acted tends to the support of this view. Experiments made on man and on the lower animals, especially the latter, by means of careful vivisections, demonstrate that guaiaicol acts upon the thermogenic centres through excitation of the peripheral nerve terminations, and reflexly upon the great functions.

The presence of guaiaicol in the urine of patients in whom the drug has been locally applied is due, the author believes, to the penetration of the vapors of the agent by the lungs,

because, when this way of entrance was avoided, no guaiacol was found three hours after a large application (10 grammes) of the drug. Again, the quantity of guaiacol taken in by the respiratory organs is not in itself sufficient to produce a fall of the temperature.

Regarding the local and general effects produced by guaiacol, these facts must be borne in mind: 1, the quality of the product used; 2, the individual susceptibility of the patient to whom it is applied; 3, the state of the general health. Guaiacol paintings, producing in febrile patients a marked reduction of the temperature, do not cause the same effects in apyretic subjects. However, even in the case of the latter, the action is manifest, especially when the guaiacol acts as an irritant, and when the individuals exhibit a special susceptibility of the skin, as happens in the case of the rabbit. The effects of guaiacol are more decided when the part upon which it is applied is covered over so that air is entirely excluded. The employment of guaiacol paintings constitutes an original, simple, and easy therapeutic measure which may render great services when the indications for their use are thoroughly established by further clinical trials.

#### GUAIACOL IN THE TREATMENT OF FACIAL ERYSIPELAS.

Continuing his clinical observations with the local use of guaiacol, L. BARD (*Lyon Médical*) details five cases of facial erysipelas treated by this novel method. From the results obtained he appears to be justified in affirming that the local application of guaiacol is efficient in the treatment of the disorder in question. The method results in diminishing the gravity and duration of the disease in a large number of cases. The author believes that this measure will also lessen the mortality of facial erysipelas. He advises the employment of 2 grammes of the drug for each application, this being made twice a day, provided the temperature is maintained below 39° C. The morning application may be dispensed with when the temperature does not go beyond 38.5° C.; that of the evening may be reduced to 1 gramme of the drug if the temperature does not go beyond 39° C. In order to avoid a too abrupt reduction of the temperature, as is apt to occur, it is better to use 1 gramme only at the first application of the medicament, without increasing this amount if the fever shows no tendency to ascend. [The results of this method have proved anything but useful in our hands.—ED.]

#### THE TREATMENT OF AN ATTACK OF GOUT.

*L'Union Médicale* gives the following advice in regard to the treatment of acute gout. Locally, it is best to apply to the inflamed joint, which, of course, is not to be moved, an ointment composed of—

R Hydrochlorate of cocaine, gr. iv;  
Vaseline, or almond oil, ℥iv.

Or to apply a bandage wet with—

R Menthol, gr. xv to xxx;  
Alcohol, ℥iij.

Or a lotion of—

R Menthol, ℥iv;  
Chloroform, ℥i.

Or iodoform collodion may be employed.

Internally, of course, colchicum is regarded as the best of remedies given, in the dose of 20 to 30 drops, or even a drachm of the wine of the root, care being taken that while the drug is pushed to its full physiological limit, the patient is not poisoned by it.

The salicylate of sodium is far inferior to colchicum in the treatment of this condition. In addition to this treatment for an acute attack, the following is employed as a prophylactic. It is advised that the bowels shall be actively moved every morning by one of the saline waters, chiefly those of the sulphate and chloride of sodium, and from 30 to 35 drops of the tincture of colchicum root, given once, twice, or thrice a day. If fever accompanies the attack, it is well to prescribe quinine in full doses, and if the pain is too excessive to be borne, morphine should be administered hypodermically.

In regard to dieting the patient, he should take as much as possible those waters which, while somewhat alkaline, do not necessarily purge, as, for example, those of Vals and Contrexéville, as they greatly increase the urinary flow and render the urine alkaline. Care should be taken, too, that the food does not consist of red meats and other gouty substances. Great fatigue should be avoided, as it tends to provoke another attack. Additional local treatment for an acute attack consists in local blood-letting, the application of iodine, of blisters in the neighborhood of the inflamed joints, of the employment of cold water locally and of antipyrin internally. Care should always be taken in prescribing colchicum to see that the kidneys are in a healthy condition, and should any irritative medicament be employed, this



precaution is to be followed. Should albuminuria indicate renal difficulty, an exclusively milk diet is to be recommended, and quinine is to be given internally in the dose of 3 grains morning and night. A saline purgative is to be used in the morning, and benzoate of sodium is to be given in the dose of 1 or 2 drachms every day.

#### THE USE OF PEROXIDE OF HYDROGEN AS A HÆMOSTATIC.

In the *New York Medical Journal*, Dr. BREWER recommends peroxide of hydrogen for the purpose of stopping hemorrhage. He has found it of great value in a number of cases. He states that it has been thought by some that the hæmostatic action of this drug is due in great measure to the fact that the peroxide-of-hydrogen fluid when brought into contact with organic matter is rapidly decomposed, giving off free nascent oxygen. This, by uniting with the hæmoglobin, converts the blood, which is generally venous in character and charged with carbon dioxide, into bright arterial blood, which, it is well known, is much more readily coagulable than the vitiated fluid.

Brewer was, however, led to question the correctness of this theory when he observed that in some of his most alarming cases the bleeding was distinctly arterial in character, and that these cases seemed to yield to the treatment as readily as those in which the oozing was undoubtedly venous.

Dr. W. G. Thompson placed the writer in possession of some facts which he observed during a series of experiments with this agent.

He observed that when a strong solution of peroxide of hydrogen (fifteen volumes or more) was brought into contact with the blood by being directly injected into the veins during life, it caused a rapid disintegration of the red corpuscles, resulting in the immediate precipitation of a semi-solid detritus which completely occluded the smaller vessels; that this effect extended so rapidly throughout the vascular system that within a comparatively short space of time the animal operated on would present the appearances characteristic of the most profound anæmia.

Thompson also observed that the application of strong solutions of this agent to mucous and serous membranes caused an almost immediate degeneration of the epithelial cells, resembling at first a rapid and exaggerated cloudy swelling, and later a complete destruction of the tissue.

In view of these facts, the writer is inclined to believe that the arrest of hemorrhage which

is observed when strong peroxide of hydrogen is applied to a freshly-wounded surface results from this remarkable disintegrating action both on the tissues and the blood, rather than the simple oxygenation and rapid coagulation of the latter, for it is easy to understand how the rapid swelling of the endothelial lining of the cut blood-vessels and the solidification of the blood would result in a more or less complete obliteration of their lumen.

#### THE TREATMENT OF ALBUMINURIC PHOSPHATURIA.

According to *La Tribune Médicale*, ROBIN read a paper on this subject before the Academy of Paris, December 19. He insists on the following treatment, which is largely hygienic and alimentary. The object of the physician must be to limit the disintegration of tissues rich in phosphorus, to favor the assimilation of phosphorus by the body, and to increase oxidation by the administration of such remedies as cod-liver oil, arsenate of sodium, and the phosphates combined with strychnine, quinine, or extract of cinchona; and, finally, by inhalations of oxygen. The physician must endeavor to increase the number of the red corpuscles, and to this end iron and strychnine are particularly valuable. For the albuminuria, gallic acid, pharmaceutical preparations of iodine, and a milk diet are to be resorted to. In addition, it is advisable in many cases to resort to mineral waters containing chloride of sodium.

#### THE TREATMENT OF DIPHTHERIA.

In the *Journal de Médecine de Bordeaux* a symposium as to the best treatment of this dangerous disease is given.

ARNOZAN considers diphtheria as a local affection, producing infection by the absorption of poisons formed in the false membranes, and that the treatment of the condition centres itself about three points.

1. Swabbing the affected parts by means of an applicator which has been wet with one of the following solutions:

Carbolic acid, 1 part;  
Glycerin, 20 parts.

Or,

Carbolic acid, ʒii.;  
Sulphuricinate of sodium, ʒii.

This application is to be made without violence, and should be resorted to every three hours day and night.

2. Frequent garglings or washings of the

mouth with boric acid or a feeble solution of carbolic acid.

3. The atomization or volatilization of carbolic acid in the air of the room, chiefly by means of evaporating a two-per-cent. solution of carbolic acid over an alcohol-lamp. Should the false membrane of the disease extend to the nasal fossæ or the larynx, this volatilization of the carbolic acid is to be directed towards the patient five or six times at night and ten or twelve times during the day. If the child is very young, it is best to employ boric-acid solutions as a mouth-wash rather than carbolic acid.

The general systemic treatment consists in the administration of the sulphate of quinine, alcohol, coffee, beef-juice, bouillon, broths, milk, and general alimentary tonics and digestives. The greatest importance is attached to proper feeding, and where absolute anorexia exists and food is refused, nutrition must be preserved by rectal injection.

DR. CHABRELY also summarizes his treatment under three headings:

1. The constant vaporization in the air of the room of phenated water, ten per cent.

2. Swabbing out the throat every two hours with lemon-juice.

3. The internal administration of chlorate of potassium and its use in gargles. [We believe that the internal use of chlorate of potassium in diphtheria is not only harmful, but distinctly dangerous.—ED.]

DR. LICHTWITZ recommends very highly the application to the diseased area of a solution of bichloride of mercury in distilled water in the strength of 1 to 500 to 1 to 100, and a gargle consisting of chloroform, 15 minims; distilled water, 4 ounces.

DR. MOURE also appreciates the necessity of strengthening the patient, and resorts to the following local treatment: As far as possible the patient should breathe an atmosphere which is well moistened. The bronchitis tents which are used so extensively in England he believes to be very valuable, and he also thinks that the vaporization of oil of turpentine is of service.

In regard to local applications, he believes that grattage of the tonsils and pharyngeal wall is of value, and applies the following solution afterwards:

R Antipyrin,  $\mathfrak{z}$ ii;  
Lactic acid, gr. xxx;  
Pure glycerin,  $\mathfrak{z}$ i.

Or, equally advantageously,

R Pure carbolic acid, gr. vii;  
Lactic acid, gr. xxx;  
Neutral glycerin,  $\mathfrak{z}$ vi.

He does not believe in violent applications to the area of false membrane, as this favors the extension of the disease. The applications of this to the throat should be made once or twice a day. If the child is old enough, gargles of alkaline solutions, such as bicarbonate of sodium or borax, should be resorted to.

DR. NEGRE recommends the following treatment: He applies to the part which is affected, by means of antiseptic cotton, lemon-juice every two hours, five or six times in the twenty-four hours. He employs a spray of solution of boric acid to the pharyngeal walls and nasal fossa, and gives tonic stimulant treatment. Should the case be very grave and the swelling of the cervical glands be considerable, he recommends as follows: Every two hours apply the following solution to the diseased area:

R Glycerin,  $\mathfrak{z}$ i;  
Carbolic acid,  $\mathfrak{m}$ xxv.

In these cases, too, he thinks that the following solution for the atomization of the nose and throat is of service:

R Carbolic acid, gr. lxxv;  
Distilled or boiled water, Oi;  
Glycerin,  $\mathfrak{z}$ iss.

He also thinks it of value to vaporize a twenty-per-cent. solution of carbolic acid in water in the sick-room, and to maintain a temperature of about 70° to 75° F. of the air of the room. Internally, he administers full doses of the chlorate of potassium with tonics, such as cinchona and alcoholic derivatives, in proportion to the age of the patients. Nourishment is to be pushed to the greatest possible extent.

DR. SAINT-PHILIPPE believes that we should remove the membrane, practise careful antiseptics of the pharynx, and sustain the vital forces of the patient against the intoxication resulting from the infective process, which is only secondary to the obstruction to the respiration produced by the membrane.

In regard to local treatment, he places his patient in a well-ventilated room at a temperature of about 70° F., and has constantly vaporized in the air of the room antiseptic substances, by preference carbolic acid or eucalyptus. He believes that cauterization of the diseased area is both barbarous and dangerous, and prefers antiseptic local applications, one of the best of which is lemon-juice, an advantage of which is that its application is devoid of pain. Tincture

of the chloride of iron is very active. A very favorite preparation with him is the sulphorinate of sodium and carbolic acid, as recommended by Arnozan in the beginning of this article. Some cases seem to be benefited by applying a powder of alum, tannin, and salol to the mucous membrane which is diseased. He regards washing the pharynx as an indispensable part of the treatment, which, of course, is not resorted to in young children, but even in them irrigation of the nose and throat should be practised. A useful application under these circumstances is lime-water. Where the temperature is high and the swelling of the neck is marked, ice applied to the swollen area and followed by a resolvent ointment, is of value.

DR. VERGELEY also places the child in an airy room, preferably upon a small iron bed, which is deprived of all canopies and similar clothing. He next insists that two persons capable of carrying out his directions to the letter shall take charge. Two or three times a day he applies to the tonsils and to the palate and pharynx, by means of a flexible applicator, a solution of boric acid, and follows it by a solution consisting of—

R Perchloride of iron,  $\mathfrak{z}$ i;  
Citric acid, gr. vii;  
Distilled water,  $\mathfrak{z}$ x.

In some cases, if the child is old enough, it may be well to insufflate a powder, consisting of—

R Boric acid,  $\mathfrak{z}$ i;  
Salol, gr. xlv;

which must be exceedingly finely pulverized before it is used. Every three hours he believes that the pharynx and tonsils should be irrigated by the following solution :

Distilled boiled water, Oi;  
Salicylic acid, gr. vii;  
Borax,  $\mathfrak{z}$ iss.

Internally, for the relief of pain and quieting the patient, as well as for influencing the disease, he recommends simple syrup, which should contain small doses of—

R Codeine, gr. vii;  
Chlorate of sodium,  
Flowers of sulphur, of each, gr.  $\mathfrak{x}$ .

If the patient is very much excited, it is well to replace the chlorate of sodium by the bromide of potassium. If diarrhoea comes on, a simple astringent mixture may be given, such

as wine of opium with a little syrup. If the false membrane is persistently reformed, it is well to employ an application of the perchloride of iron, or in its place an application consisting of—

R Glycerin,  $\mathfrak{z}$ iss;  
Metallic iodine, gr. iss;  
Iodide of potassium, gr. vii.

Sometimes, in place of this irrigation of the area, solution of sodium every six or eight hours is advisable until the false membrane disappears. It is also well to vaporize in the atmosphere, which should be diluted with water,—

R Powdered glycerin,  $\mathfrak{z}$ i;  
Crystalline carbolic acid, gr. vii.

During convalescence, quinine, iron, and salt baths, with frictions of the skin, are to be resorted to. Care should be taken that all discharges from the patient's mouth are thoroughly disinfected.

#### THE TREATMENT OF WHOOPING-COUGH BY BROMOFORM.

According to the *Revue Internationale de Bibliographie Médicale*, PELICER has employed bromoform with very good results in the treatment of this obstinate affection. It is a colorless liquid, produced by the action of bromine on alcohol in the presence of a base. When administered to animals by inhalation or hypodermic injection, it produces narcosis, without greatly disturbing the respiration or circulation. The dose is 1 drop for each year of the patient, given four times a day, but this dose should be increased progressively until it is taken many times a day. He has given as much as 48 drops a day during six days to a child of two years, but after this dosage he observed a general erythema, but no diarrhoea. There was increased frequency of the pulse and respiration. Bromoform diminishes the number of the attacks and their duration. Under its influence the vomiting ceases and the appetite returns. It is to be employed during a period of two or three weeks. In a number of cases he used it even longer than this.

#### THE USE OF OXALIC ACID AS AN EMMENAGOGUE.

In the *Medical News*, TALLEY records his experience with this substance. During the past twelve months he has used it with very

gratifying results in a series of cases of amenorrhœa presenting themselves for treatment at the Polyclinic and at the Pennsylvania Hospital. Talley does not entirely agree with Dr. Bloom in his article in the *Medical News* of October 14, 1893. While an efficient emmenagogue and a capable abortifacient, oxalic acid is not to be regarded as a perfectly safe drug. Within the last month he met with a case in which toxic symptoms followed the ingestion of three doses of  $\frac{1}{2}$  grain each, repeated at about four-hour intervals. The patient was an anæmic girl, twenty-two years of age, who gave a history of scanty menstruation and a complete cessation of her periods for three months. The uterus was not enlarged, nor were there any of the signs of pregnancy. She was placed upon oxalic acid in  $\frac{1}{2}$ -grain doses, which she was directed to take after meals, largely diluted with water. After the third dose she was seized with vomiting, pain in the epigastrium, and became completely prostrated. The pulse was weak and rapid and the extremities cold. She was placed in bed, external heat was applied, and the symptoms of collapse were soon overcome. She then complained of cramp-like pain in the hypogastrium and back. These symptoms were followed by an eruption upon the arms, trunk, and legs, resembling that of hives, which was still present seven days later and was attended with considerable itching. The symptoms gradually diminished in severity, the gastric symptoms being the most pronounced.

The action of oxalic acid seems to be directly as a stimulant to the uterine mucous membrane. It is, therefore, applicable to the treatment of amenorrhœa of the anæmic as well as of the plethoric type. Upon the pregnant uterus oxalic acid is capable of producing powerful uterine contractions, which terminate in the expulsion of the product of conception. This was observed in two cases of early physiologic amenorrhœa to which oxalic acid had been administered, the diagnosis of pregnancy not having been made.

Considering the fact, therefore, that oxalic acid, even when administered in fractional doses, is capable of producing toxic symptoms, and bearing in mind its powerful abortifacient properties, we should be guarded in recommending it as a safe remedy. Talley considers it a valuable drug in the treatment of amenorrhœa, but one that should be given guardedly, carefully watched, and only prescribed when the diagnosis of pregnancy has been excluded.

#### SALINE TRANSFUSION.

The somewhat sensational procedure of the transfusion of blood as a means of rescuing moribund patients from death from hemorrhage has been known and practised from time immemorial, though it cannot be said, outside of novels belonging to the melodramatic school, to have been productive of anything like uniformly satisfactory results. The fact is that blood is a very delicate fluid, and requires special skill and appliances for its transfusion, otherwise it may prove the means of precipitating the catastrophe which it is sought to avert. Of late years, especially since the regretted Dr. Woolridge devoted special attention to the physiology of the subject, the practice of injecting saline solutions directly into the veins has come more generally into vogue, with the happiest results. At first the endeavor was made to compound a solution of salts theoretically conforming to the blood plasma, but this has since been shown to be quite unnecessary; in fact, pure water at a suitable temperature may be injected with impunity in comparatively large quantities. In any event, it is sufficient for the purpose to measure roughly about a teaspoonful of common salt to the pint of boiled water, and cooled down to about 100° F., in preference, though even this precaution is not essential to success, provided that the actual temperature of the solution does not fall notably below blood-heat. At the last meeting of the Obstetrical Society, Dr. Horrocks was enabled to relate a series of cases in which patients, pulseless and apparently moribund from severe hemorrhage, were promptly and almost uniformly rescued from impending death by the free and immediate use of intravenous saline injections. Not the least remarkable fact about these cases was the quantity of fluid that was employed, amounting, as it did, in several instances, to upward of six pints. Moreover, the apparatus required for saline transfusion is of the simplest possible character, comprising, as it does, only a funnel or jug, some tubing, and canula for insertion into the vein. There is nothing in the proceeding to disturb the equanimity of even the most timid practitioner, and as the procedure is, we believe, destined to become more generally employed, not only in hospitals, but in private practice, its simplicity and the ease with which it can be carried out are very important features. It is not only in cases of severe hemorrhage that these transfusions are useful. They have been employed with strikingly good results in shock, and we have known surgeons to order copious injec-

tions prior to commencing an operation on patients whose condition was such as to inspire doubts as to their ability to resist the further shock of operation. We are not as yet in a position to dogmatize as to the ultimate value of injections against shock, but Dr. Horrocks's cases prove beyond the reach of doubt the extreme usefulness of this last means of averting death in a very common and 'tragical series of cases. Although Dr. Horrocks repudiates any knowledge of the value of the transfusion of saline solutions in shock pure and simple, it must be very difficult to distinguish between the collapse due to the hemorrhage and that attributed to the shock which is associated with loss of blood, even in relatively small quantities, so that it is quite possible that some of his cases were, after all, due to shock. The arguments on which the proceeding is justified are straightforward enough. The removal of a large quantity of blood determines such a lowering of the blood-pressure that the circulation falls through, so to speak, for want of a circulating medium, and this in spite of the fact that on physiological data we are warranted in assuming that what remains would be sufficient to carry on the vital processes if only it could be circulated. The introduction of a quantity of fluid roughly corresponding to the amount of blood lost, re-establishes the circulatory balance. It must, however, be had recourse to without loss of time, because the heart and arteries rapidly lose the power of propelling the blood once that function has fallen into abeyance. Altogether, the transfusion of saline solutions is a very valuable procedure, well within the reach of the every-day practitioner, requiring no special skill or apparatus to carry out. For this reason it is highly desirable to generalize a knowledge of its use, the more so seeing that in text-books transfusion of blood is still recommended as a *dernier ressort*, showing that their authors are still ignorant of this newer plan of obviating the immediate consequences of the direct abstraction of large quantities of blood.—*Medical Press and Circular*.

#### BROMIDE-OF-POTASSIUM-POISONING.

DR. GREENLESS (*Quarterly Journal of Intemperance*, vol. xvi., No. 1) has recently published several cases of poisoning from this source. The first case was an epileptic, who took 75 grains a day for three weeks, when stupor, coma, and extreme prostration and death followed. The post-mortem showed intense con-

gestion of the meninges. In another case, an epileptic, the same amount of bromide of potassium—75 grains a day—was given, and in ten days coma and death followed. Both the brain and meninges were congested and the kidneys were in the advanced stage of cirrhosis. The other cases were less prominent, and clearly from bromidism that was the result of long use of the drug. In some cases of inebriety larger doses of bromide produces stupor and prostration, from which recovery is slow, and followed by continued prostration. It is an error to suppose that the bromides are harmless. In certain cases they are capable of causing very serious results, and should be used only for a short time in large doses. We have yet to learn many things concerning this very commonly used drug.

#### NITRATE OF STRYCHNINE IN ALCOHOLISM.

From the results obtained in twenty-five cases we can learn that, simultaneously with the use of this remedy, the craving for alcohol in inebriates diminishes and in a few days is completely gone, and through the withdrawal of the poisonous beverages and the tonic effects of the strychnine there is a more or less rapid restoration to sound physical health and of the mental powers; but as most of those treated have relapsed within from one to eleven months, the inhibiting power of the remedy is not permanent, and while it temporarily relieves the distressing and overwhelming craving for more stimulant and promotes a return to normal health, in which condition the patients may continue to remain, yet they still lack the necessary will-power to enable them to avoid the dangers which they know will precipitate a return to their previous enslaved and degraded condition. So that, while it is fully within the power of medical science to restore these patients to temporary health, strychnine does not—as doubtless no drug treatment ever will—prevent the possibility of further relapses, although we can always depend on it to arrest what would be a prolonged debauch if its aid is early resorted to. That weakened will-power is a result of a prolonged use of alcohol is generally conceded, as is the fact that the tendency to alcoholism is in a large percentage of cases inherited, and it is often, as dipsomania, one of the manifestations of insanity; that a definite series of pathological conditions follows the continued indulgence in alcohol, differing only in degree in the case of the milder methyl to the powerful effects of amyl alcohol, the nervous system showing the

earliest and most marked disturbance, although every organ and tissue in the body eventually suffers. These and many other facts have led neurologists to place alcoholism as a distinct disease among the neuroses.

This position implies a complete revolution in the methods of treating these cases, and has brought to the aid of philanthropists and moralists the assistance of the medical profession, upon whom now devolves the duty of further elucidating the true pathology of the disease and indicating the best means of restoring this numerous class of patients to a normal condition.

That the urgent demand for relief from the evils of intemperance is being recognized by the profession is evidenced by the increased interest taken in the work of the American Association for the Study and Cure of Inebriety, and in the Section for the Study of Inebriety of the British Medical Association, and by an ever-increasing number of scientific investigators throughout the world.

Before rational and effective measures can be adopted for the proper management of inebriety, we must have correct opinions in regard to the physiological actions of alcohol and the pathology of the disease; otherwise we must trust to the empirical results of experience.

The chief action of alcohol, then, is to paralyze the vaso-motor system, dilating the arteries. Strychnine, besides exalting the excitability of the spinal cord and probably the motor centres in the brain, stimulates the vaso-motor centres, contracting the arterioles, as well as being one of the most efficient heart tonics through its stimulating effects on the cardiac ganglia.

While we have in strychnine a true antagonist to the action of alcohol and one that will counteract its effects, the inebriate still requires aid which can scarcely be expected of drugs; he needs the mental and will-power to overcome his acquired or inherited tendency to resort to narcotics. This must come from treatment which seeks first to restore all the abnormal conditions of the patient, whether due to alcohol or otherwise; then strict abstinence must be maintained, the patient being aided by moral suasion, the diversion of continual employment, and the education of the mental and moral faculties to a higher status; even the influence of hypnotic suggestion may be applied in suitable cases, as has been done recently with a fair measure of success; and, where these means fail, then institutions where voluntary or forced detention can be secured,

and where all the present known means can be most successfully applied, must be the only hope of restoring the unfortunate subjects of narcomania.

#### THE TREATMENT OF PNEUMONIA.

In the *Virginia Medical Monthly*, DR. CUNNINGHAM, of Ensley, Ala., contributes a very valuable paper upon this subject, regarding the results reached by him in the treatment of ninety-three cases of croupous pneumonia at one of the prison missions of Alabama. In the matter of treatment he discusses chiefly the use of stimulants, antipyretics, and special measures. In eight of his cases no stimulants were used. In the remaining eighty-five, whiskey was used in all, strychnine in forty-one, digitalis in fifteen, strophanthus in twenty-four, carbonate of ammonium in six, nitro-glycerin in two. Strychnine, which was employed pretty much through the entire attack, was aided in the event of extreme heart-failure by strophanthus, but in some cases it was found necessary to give  $\frac{1}{10}$  grain of the latter drug every three hours as a matter of routine. Under these circumstances it was always given hypodermically, and the effect produced by it was remarkable. The digitalis and carbonate of ammonium were abandoned as useless; particularly does Cunningham believe that carbonate of ammonium is of no value. The antipyretic measures which were employed were baths, quinine, phenacetin, and acetanilide. In eighty of the ninety-two cases in which antipyretics were used, twenty-eight died, but twenty-one of these suffered from a double pneumonia, which practically involved the entire pulmonary tissue on both sides, and would therefore probably have been fatal in any event. He reaches the interesting conclusion, from a careful analysis of the various cases, that the mortality in the bath cases was 1 to 2.25 of the other antipyretics. He therefore believes that the bath method of reducing the temperature in pneumonia is the safest that can be resorted to. Under special treatment, he confines his remarks chiefly to the employment of hypodermoklysis, or the subcutaneous injection of a saline solution, chloride of sodium, one drachm to the pint of water. This method of treatment he believes to be absolutely new in croupous pneumonia. He employs it with the object of producing reaction from the prostration and marked debility which are present in many cases, and he believes that its employment was followed by advantageous results, particularly in those cases

which were suffering from apparent cardiac failure, which, he thinks, may be due to ante-mortem heart-clot. He believes that the addition of chlorides to the blood, which are under these circumstances passed out of the body too freely, does much towards preventing the formation of clots in the cardiac cavity, and employs daily from 4 to 12 ounces in this way. Of course it is necessary that the salt solutions should be boiled and the operation performed in an absolutely aseptic manner. The conclusions which he reaches at the end of his valuable paper are as follows:

1. It is a constitutional disease with a local anatomical sign, consisting of an inflammation of the pulmonary parenchyma, and caused by its own specific materies morbi or germ, probably that of Fränkel or Friedländer.

2. That the special circumstances under which this germ is evolved and operates are unknown, as we have it under diametrically opposite conditions, both good and bad.

3. That the disease, as a rule, prevails endemically, rarely epidemically, and still more rarely sporadically.

4. That these endemics differ in type and in extent of pulmonary inflammation, and, consequently, in mortality.

5. That the disease is severer in public institutions, especially prisons.

6. That the negro is especially predisposed to the disease, has less capacity to resist it, and, consequently, a larger mortality.

7. That coal-miners, especially negroes, while not predisposed to the disease, are favorable subjects for extensive pulmonary inflammation, and have less capacity to resist the disease, owing to the more or less anthracosis of the pulmonary tissue.

8. That the mortality is mainly determined by the type of the disease; first, in the primary effect of the germ upon the nervous system; and, secondly, in the extent of pulmonary inflammation and in the rapidity of its invasion and development.

9. That the mild, uncomplicated cases, with a fairly good pulse and moderate temperature, and with only one lobe, especially a lower lobe, involved, intrinsically tend to recovery; and that the severe cases, complicated or not, with fast and weak pulse, fast or labored respiration, regardless of temperature and attended by great prostration, intrinsically tend towards death, and without judicious treatment will die, regardless of the extent of pulmonary inflammation; and that in the cases in which the pneumonia is double, particularly if the double invasion is simultaneous, their tending is to a

fatal issue; and, finally, that in the cases in which the inflammation is universal by a simultaneous or rapidly successive invasion of the entire lung structure, death is the inevitable rapid result. Therefore, in comparing statistics, all these things should be taken into account; otherwise they are worthless. Hence the wide divergence in the statistics and difference in treatment of various observers.

10. That the immediate cause of death in many cases is ante-mortem heart-clots.

11. That the main features of treatment are: (a) to combat the shock of the germ invasion, best done by opium, stimulants, and, in the writer's opinion, hypodermoclysis; (b) to stimulate freely, the best stimulants, as a matter of routine, being whiskey and strychnine, supplemented in extreme cases by tincture strophanthus; (c) to control temperature, the best method being the bath; (d) to prevent, if possible, heart-clots, hypodermoclysis, in his opinion, being the most reliable; (e) to meet indications as they arise.

#### *THE TREATMENT OF SEVERE ALBUMINURIA ASSOCIATED WITH PREGNANCY.*

In a paper read at the last meeting of the Obstetrical Society, Dr. HERMAN (*Medical Press and Circular*) concluded a valuable series of observations on albuminuria associated with pregnancy and labor. Every practitioner who observes his cases must have noticed that there are at least two main groups of kidney-disease in this association. Albuminuria in a more or less marked degree is a very common complication of pregnancy, but in a large proportion (the majority) of the cases it does not lead to any of the graver symptoms to which pregnant albuminuric women are liable. In a certain number of such patients, however, not only is the disease acute in its onset and violent in its manifestations, but we get the dreaded eclamptic convulsions which threaten the life of the mother and jeopardize that of the unborn infant. The risks dependent upon the renal disease are, then, first, the life of the mother; secondly, that of the foetus; and, lastly, the danger of the acute phase giving place to a chronic form of Bright's disease after delivery. The main points which still call for discussion are the means of distinguishing between the cases which are likely to import a grave sequel, and the best method of obviating the danger of usual defects and renal disease as a sequel. Dr. Herman tells us that the acute form attacks mainly women who are pregnant

for the first time, and he points out that when the albumin in the urine consists mostly of serum albumin the prognosis is grave. It is, therefore, necessary for the practitioner to accustom himself to testing for the presence of paraglobulin as compared with serum albumin. One of the common symptoms associated with the albuminuria of pregnant women, as in albuminuria from other causes, is failure of vision, attributable to the presence of albuminuric retinitis, and possibly subretinal hemorrhages. In the graver cases this may go on to complete loss of perception of light. Although in most cases the cecity passes off more or less when delivery has been safely accomplished, this is by no means always the case, and the preservation or protection of sight becomes one of the points to which treatment must be directed. Now, the treatment of the albuminuria of pregnant females is practically confined to the induction of premature labor. As soon as the uterus has been emptied, the symptoms usually promptly subside; indeed, the promptness of this subsidence is one of the most remarkable features of renal disease associated with pregnancy. The speakers in the discussion that followed accepted this conclusion, and did not hesitate to recommend that the uterus should be emptied forthwith in all really serious cases of albuminuria associated with pregnancy. The child is sacrificed, it is true, but its chances of survival in the presence of eclampsia, or even of severe albuminuria, are small indeed, so that this fact cannot and ought not to be allowed to weigh in the balance, especially as the mother is thereby rescued from one of the most terrible complications that can threaten the pregnant woman. Then, too, in the cases presenting indications of albuminuric retinitis. These are always severe cases, and most of them die if left unrelieved. Moreover, the further the case is allowed to go on the greater is the damage done to the delicate structures of the eye and the greater are the risks of permanent impairment of vision. This is a serious point well worthy consideration, and in future obstetricians will be well advised if they adopt the suggestion to empty the uterus as soon as, at latest, ophthalmoscopic examination reveals the familiar and easily-recognized signs of albuminuric retinitis. There remains as an additional reason for adopting this course the fact that, even in women who either do not have, or who survive, the fits, the kidneys do not always recover from the disturbance to which they have been subjected, and the patient not infrequently remains the victim of chronic Bright's disease.

On these grounds, therefore, severe albuminuria ought to be added to the list of indications for the induction of premature labor, without waiting for the supervention of eclamptic convulsions before coming to a decision. This is not a specialist's question. It is one which any practitioner may be called upon to consider at any moment, and it is to be hoped in the best interests of his patient that he will henceforth recognize the extreme and manifold gravity of the risks attending the continuance of albuminuria in pregnant women.

#### *THE TREATMENT OF SPASMODIC TORTICOLLIS BY CONIUM.*

Before the Section of the College of Physicians of Philadelphia, DR. SINKLER read a paper on this topic. He pointed out that drugs of all kinds have been recommended in the treatment of this affection. Splints and mechanical appliances are of no benefit, but usually aggravate the affection. From the fact that frequently the muscles principally involved are the sterno-mastoid and the trapezius, the affection has been supposed to be due to disease of the spinal accessory nerve, and treatment has been directed to this nerve.

Counter-irritation, galvanism, and actual cautery, applied as near as possible to the origin of the nerve, have been used, but with far from satisfactory results. Surgical measures, such as stretching this nerve and the excision of a large portion of it, have been resorted to, but in only a small proportion of cases has relief followed the operation. It is, therefore, evident that the disease, except in rare cases, involves the deeper muscles of the neck, as well as the sterno-mastoid and trapezius.

Lezynski recommends the use of belladonna, given in increasing doses almost to the point of toxic influence, and keeps this up for four or five weeks. He has had marked success from this method, and Grey says that since he has followed Lezynski's plan he has cured eight cases of spasmodic torticollis by the use of belladonna. Wharton has used this remedy also, but without success. The best results which he has seen from drugs in this disease have been from the use of conium. This drug was recommended by Harley many years ago in the treatment of spasmodic affections, but it never has been used extensively. G. M. Hammond reports the successful treatment of a case of painless facial spasm by the use of this drug, and Rockwell, of New York, recommended it in the treatment of chorea. The text-books, however, do not speak of it favorably. Hare,



in his work on "Therapeutics," remarks, "that conium holds an unimportant place in the drug-list of to-day." He has found, as in Sinkler's experience, however, that it is decidedly useful in many forms of muscular spasm, when not due to central causes.

From experiment it has been found that conium causes paralysis of the motor nerves when given in physiologic doses. There are drooping of the eyelids, staggering and inability to walk, showing its influence upon the muscular system. It is, therefore, reasonable to expect that in the treatment of muscular spasms, when peripheral in origin, the remedy would prove useful.

Harley recommended the juice of fresh leaves, but this is difficult to obtain, and the fluid extract is a reliable preparation. The dose in which it is recommended in the text-books is entirely too small to be efficacious. The writer usually begins with 15 or 20 drops three times a day, and frequently increases the dose to 60 drops. There are two fluid extracts in the market,—one of the leaves and the other of the seeds. Sinkler usually gives the latter. He has seen several cases of spasmodic torticollis which were relieved by this remedy, and two or three cases of painless facial spasm which were distinctly benefited by its use, in one of which the spasm entirely ceased.

#### POISONING BY CAMPHORATED OIL.

Among a number of reports of cases of poisoning by various substances in the *Pharmaceutical Journal and Transactions* is one detailing the case of a child aged five years. The mother stated that the child had been suffering from whooping-cough, and that she had been using camphorated oil over its chest and back. In attempting to give the child its medicine, she poured out by mistake a teaspoonful of camphorated oil and gave it to the child. The child at once complained of its taste, and the mother, who smelt the spoon, found out her mistake. The child died in epileptic convulsions, adding another case to the records which show that poisonous doses of camphor produce such convulsive disturbances.

#### A CASE OF STRAMONIUM INTOXICATION.

MAISCH, of New York, reports a case of this character in the *Medical Record* of October 21, 1893.

The rarity of these cases, at least in our

larger cities, and the marked manifestations exhibited in this instance, led the author to place the following on record:

Some three months ago he was summoned, early in the morning, to Mrs. B. The impression made upon the recorder was that he had to deal with a case of acute alcoholism. The patient, a woman about thirty years of age, well developed, robust, and healthy in appearance, retired perfectly well and sound one hour before, and fell asleep shortly after lying down. She had not been exposed to any contagion, "nor had she taken any stimulants or medicines." Shortly after falling asleep her husband noticed that she became very restless, "breathing deeply and loudly," and upon rousing her she appeared "out of her mind and wild." Pulse, 130 and thready; conjunctivæ deeply injected and reddened; eyes wildly staring and restless. Face and chest covered with an erythema like that of scarlatina or that caused by belladonna. Tongue and fauces dry and parched; respiration shallow and increased to 35 per minute. Wild and active delirium; hallucinations of sight and hearing. Complaints of intense thirst and severe frontal headache. Patient almost unmanageable, throwing and breaking everything within reach, and constantly looking under bed and searching closets for strange men and animals.

The symptoms were those of atropinismus, and, after administering copious draughts of warm water, salt, and mustard to gain time, the author gave sulphate of morphine in the dose of half a grain subcutaneously.

Upon declaring to her husband that the patient must have imbibed something that was poisonous, he learned from a servant that her mistress had taken some kind of tea before retiring.

Upon being shown what remained, the toothed, ovoid thorn-apple leaves, the bitter, pungent, and metallic taste peculiar to it was recognized.

On further search, a package of compressed stramonium leaves, such as is sold in the stores, was found. Diagnosis was established.

One hour after the exhibition of the morphine salt the patient was resting quietly; an ice-bag had been put to her head and morphine sulphate .015 (gr.  $\frac{1}{4}$ ) was ordered every four hours, and cold black coffee for the thirst, which still was intense. The next forenoon she had become perfectly rational; the erythema had disappeared, as had also the throat symptoms. She had not the least recollection of what had occurred during the night after having taken the tea, which was intended to rest

her menstrual flow. The mydriasis lasted for almost four days.

It may be of interest to know how much of the drug had been taken. The package contained one ounce of the dried leaves, of which one-half had been used in preparing the infusion; to this was added a cup (eight ounces) of boiling-water, and after standing one-half hour, she took two tablespoonfuls. From this we may deduce that one ounce of an infusion of the strength of 1 to 16, considerably weaker than is official (1 to 16), caused toxic effects in this case. The quantity is certainly not a large dose, and it is to be presumed that the woman has an idiosyncrasy for the drug. Patient made a complete recovery.

#### OLIVE OIL IN THE TREATMENT OF NEPHRITIC COLIC.

AUSSILLOUX (*Bull. Génér. de Thérapeutique*) reports two cases of nephritic colic, occurring in elderly persons, in which the administration of olive oil produced most excellent results. The action of the oil in controlling the crises of the disorder was undoubted. How the drug acts, whether directly upon the calculi themselves or owing to its cholagogue or purgative properties was not determined. The action is apparently a reflex one, though even this cannot be accurately demonstrated clinically or experimentally. The oil stops the spasms of the ureters, as does a hypodermic injection of morphine, with the important difference that in the case of the latter remedy the relief produced is only temporary, whereas in the case of the oil it is definite. The oil seems to act in nephritic colic precisely as it does in hepatic colic, about which many observations have already been published. Regarding the administration of the oil, some practitioners prefer to give it in single doses of from 150 to 400 grammes or more. The author, however, recommends small quantities at a time, repeated as required. He refers to a singular method of administering the medicament in certain parts of France,—that is, in garlic broth; this is prepared by boiling a few cloves of garlic in water with a little salt. The broth is then poured over slices of bread soaked in the oil, constituting in this manner garlic soup. The author leaves out the bread and increases the amount of the oil from two to four tablespoonfuls. Patients take this beverage more readily than the pure oil, and it has been found to be just as efficacious. The dose may be repeated in the course of a few hours, if necessary.

#### THE PHYSIOLOGICAL ACTION OF DUBOISINE.

DE MONTYEL, the chief physician of the insane asylums of the Seine, contributes a paper on this topic to *La Tribune Médicale*.

"The question is, Does this substance modify the secretions? It does in a marked manner. First, it has the incontestable property in every case of constantly drying the skin and mucous membrane. The drying of the skin causes no inconvenience, and the patients do not perceive it. It has not the same effect so far as concerns the drying of the buccal mucous membrane, which has never failed to cause great discomfort, all our cases, without exception, having complained of the dryness of the mouth. When I say all our patients, I am wrong, for two epileptics and two hysterical cases had abundant salivation, and the first two, moreover, had the body covered with perspiration. These anomalies, however, were due, I believe, not so much to the drug as to the idiosyncrasies of the patients, salivation forming part of their disease. The duboisine also has diminished the urinary secretions in some cases very notably. Thus, in thirty-seven cases—that is, fifty-four per cent.—the quantity in twenty-four hours was less than four thousand grains. These figures are all the more surprising, inasmuch as the majority of our patients were subject to polyuria; but duboisine differs markedly from thymacetine in that it has no influence on micturition.

"One patient, it is true, after a dose of 1 milligramme, had the first day a urethral spasm of short duration; this patient suffered from general paresis. There are two other effects of this drug, besides that upon the heart, which remain to be considered. The first is its action upon digestion. The effect upon stomach digestion has been injurious. However, this was not the case with intestinal digestion, except that it produced a slight degree of constipation, owing, perhaps, to the suppression of the intestinal secretion. This has not been found to be the case by other observers, and possibly these discrepancies are due to individual idiosyncrasies.

"With reference to its effect upon gastric digestion, our cases may be divided into three classes,—first, those who were simply the subject of experiment; second, those who were undergoing a sedative course of treatment; third, those who were treated for insomnia.

"The most decided symptoms were observed in cases of the second group,—those on sedative treatment.

"In the first days of the medication there were no marked symptoms, but on continuing it there were decided digestive disorders, which appeared at variable intervals, according to the dose and individual susceptibility.

"First there was a diminution of appetite, with or without a coated tongue and a perverted sense of taste. Some of them stated that their appetite was diminished and that they had a distaste for all nourishment, while others complained of a constant unpleasant taste in the mouth, resembling that of soap, which was imparted to their food. This gave rise to the suspicion that they were being poisoned.

"This perversion of the sense of taste was, however, rare, since among thirty-five cases it was only observed five times,—that is, thirteen per cent. A more frequent symptom was vomiting, which occurred in ten cases,—that is, in twenty-nine per cent. In three instances the vomiting was very slight. The vomiting occurred exclusively at mid-day or in the evening,—that is, at the principal meals or immediately after them. It appeared to be due to an intolerance of food. The patients had no sooner begun to eat than they rejected the few mouthfuls which they had swallowed, and then resumed their meal without apparent inconvenience. In no instance was the vomiting sufficient to empty the stomach completely.

"More rarely the vomiting occurred shortly after leaving the refectory, but still only partially emptied the stomach, as it was never continuous, several days sometimes passing without its recurrence.

"Among the twenty experimental cases of the first group gastric disorders were less pronounced. Not one of those who took the drug for the period of three days suffered from nausea. Only hysterical patients on the fifth and sixth day made attempts at vomiting, which were unsuccessful.

"These facts confirm the preceding statement that the stomach disorder is not an early effect of the drug. It must, however, be admitted that in forty-five per cent. of these cases there was loss of appetite, attributed by the patients themselves less to the remedy than to their confinement to bed.

"The importance of determining whether or not duboisine exerts an injurious effect upon alimentation, even when vomiting does not occur, will shortly be made manifest.

"The thirty-one insane of the third group, to whom duboisine was administered at bedtime, enjoyed an almost absolute immunity from gastric

disorders. These cases, in which we prescribed the remedy, we observed closely in regard to these symptoms. In only two cases—one an alcoholic, the other a paralytic—did vomiting occur. In a maniac's case complete loss of appetite was noticed. From the foregoing it appears that gastric disorders occurred in a descending scale in the three classes of cases,—slight in the first, very pronounced in the second, almost absent in the third. We believe the reason of these differences to be due to the mode of administering the remedy, or rather to the time of its administration, for the doses of the drug and the duration of its administration seem to count for nothing, as the doses were as great and the remedy was continued for as long a period in all the cases. On the other hand, the differences as to the time of the injections were very great. The patients to whom the drug was administered as a hypnotic dined at six o'clock and received their hypodermic injections at half-past seven,—that is to say, at the height of digestive activity,—and suffered no inconvenience. It appears, therefore, that duboisine does not exert an injurious action if administered while digestion is in progress, but if given in the intervals between meals it disorders the ensuing digestion.

"The insane to whom the drug was administered as a sedative, and who took their meals three hours after the injections, suffered from marked gastric disorders, while those who took the drug in the evening while digestion was in progress, and who passed the night without eating, receiving no food until the next day at seven o'clock,—that is, thirteen hours after the injection,—were, as previously stated, free from gastric disorders.

"It is, therefore, manifest that duboisine may be given without inconvenience or unpleasant results immediately after meals, provided there is a lapse of at least five or six hours before the next repast.

"Ignorant as we were at first of these facts, we made the mistake of selecting the hours of nine in the morning and three in the afternoon as the times for administering the drug.

"We are about to undertake a new series of experiments to ascertain whether the same patients who vomited under these conditions will be free from digestive disturbances if the injections be administered at seven in the evening and at noon immediately after the mid-day meal.

"It is of great importance to endeavor by all possible means to reduce to a minimum the action of the drug upon the stomach. If di-

gestive disorders were inseparable from its administration, we would be hardly able to avail ourselves of its admirable sedative properties.

"We will now consider the influence of duboisine upon nutrition. Judging from the thirty-one cases to whom the drug was administered during the day for the purpose of allaying nervous excitement, the effect was decidedly disastrous. These cases have all lost flesh, some of them to such an extent as to compel us to abandon the use of the drug.

"Not anticipating such a result, we omitted to weigh our patients at the beginning of the treatment, but did so as soon as it was abandoned on account of their emaciation. We then observed that, in spite of symptoms of nervous agitation, which had been partly suppressed by the drug, they rapidly gained in weight, some of them to the extent of six kilogrammes in three weeks. It is, therefore, incontestable that duboisine, in spite of its marked sedative effect, exerts an unfavorable influence upon nutrition.

"It must be observed that there were never any unpleasant local accidents at the points of the injections. A few of the patients complained bitterly of them and offered vigorous resistance, some without giving any reasons therefor, others complaining of severe pain; still others believed it to be a device of their enemies, while another set were unwilling to be the subjects of experiment; but in reality no local disorder was ever produced, although the general nutrition was injured.

"This fact being placed beyond question, we next proceeded to investigate as to whether these nutritive troubles were the direct result of the action of duboisine or an indirect consequence of the disorders produced in certain organic functions. Duboisine has the property of raising the temperature; in other words, of increasing combustion; at the same time it retards the circulation, besides causing a bitter taste in the mouth and anorexia. I was led to regard the emaciation which followed its use as the result of these altered physiological actions. However, further observation of the patients did not confirm the opinion, for many of them became so emaciated as to necessitate the withdrawal of the remedy, although they had never vomited and had never suffered any loss of appetite. These facts, observed by the head nurse, an intelligent man who had lived a long time among the insane, were certainly opposed to the view that the action of the remedy was an indirect one.

"Those who suffered from gastric troubles undoubtedly emaciated to a greater extent and more rapidly, but others who were free from these disorders also lost flesh. I was impressed by these facts when I wrote my two papers, recently published, on the sedative action of duboisine, administered in continuous and interrupted doses to the insane (*Archives de Neurologie et France Médicale*, 1893). Since that time my more recent researches on the hypnotic properties of this substance have furnished me with fresh arguments in favor of its indirect action upon nutrition through the medium of gastric disorders. This is confirmed by the fact mentioned above, that injections administered in the evening, at seven o'clock, neither interfered with digestion nor with the nutritive functions.

"Of the thirty-one cases to which duboisine was administered in this manner, eight (twenty-six per cent.) increased in weight and eighteen (fifty-eight per cent.) neither gained nor lost,—that is to say, in eighty-four per cent. nutrition did not suffer. This result is, besides, confirmed by the fact that the five patients who lost weight were precisely those who suffered from gastric disorders. Two of them suffered from vomiting, and two others who did not vomit lost appetite to a considerable extent and partook of very little food. The fifth, an epileptic, suffering from insomnia, requested that the remedy be discontinued on account of loss of appetite.

"For these various reasons I am inclined to the opinion that duboisine exerts its injurious action upon nutrition through the gastric disorders which it excites.

"The drug is undoubtedly a wonderful sedative; but if it disordered nutrition in a direct manner we would be obliged to abandon it, at least in the treatment of insanity, in which the first indication is to fortify the nutrition. If, on the other hand, it exerted an injurious effect on nutrition through its interference with digestion, there would remain a hope of finding a method of administering it without this result.

"With this object in view, we have undertaken a new system of researches, which consists in administering the drug at seven o'clock in the evening and at noon. Whatever may be its result, it is certain that duboisine exerts directly or indirectly a decidedly unfavorable effect upon nutrition, and the knowledge of this fact is important to the appreciation of the indications and contraindications of the drug. The above-mentioned physiological effects of duboisine do not occur with equal frequency,

while some of them, such as sedation, reduced arterial tension, sluggish pupil, elevation of temperature, somnolence, dryness of skin and mucous membranes, are almost constant; the others differ widely in each individual; in fact, there are few remedies whose action seems to depend so largely upon individual idiosyncrasy. Even in the same subject the physiological action of the drug differs from day to day without any apparent reason. The elevation of temperature, which was constant, was generally slight, never exceeding seven-tenths of a degree above the normal point; the increase in the number of respirations was in many cases only two or three above normal. On the other hand, certain decided alterations of function were quite rare, such as flushing of the face, vertigo, and thirst. The different effects of the remedy seemed to depend somewhat upon the mental state of the patient; the hysterical patients seemed to be most susceptible to the drug; the maniacal cases were the least affected by it. Between these two groups come the paralytic and the epileptic, the latter perhaps being more susceptible to it than the former.

"We have already mentioned that the different results varied according to the mode of administering the remedy. We have seen that the digestive disorders seem to depend upon the time of its administration. I will add that hypodermic injection is superior to its administration by the mouth, both as regards the rapidity of its action and its efficacy. It is also better to give the drug interruptedly than continuously, in order to avoid a tolerance of it; and, finally, it is better to give it in fractional doses than in a single dose.

"The time at which the various physiological effects of the drug manifest themselves, their duration, and their persistence have offered some diversities worthy of mention; the modification of the dynamometric force, of sensation, of the reflexes, and of the temperature have been early and persistent; they appeared immediately after its administration, reappeared at each successive dose, and continued for three or four hours. The effect upon the secretions, though more tardy in appearance, was of longer duration. On the day after the drug was taken the patients complained of dryness of the throat. In certain cases vertigo and hallucinations of the sight were of regular recurrence, causing them to refuse to submit to the medication. Happily, these cases were exceptional. The sedative effect of the drug is at the same time the most persistent and the one of which the patient first acquires a toler-

ance. Sometimes it has lasted during the entire period of its administration, while again the tolerance of it has become so great as to resist the largest doses. Of twenty-two cases in which the calmative effects were at first decided, a tolerance was acquired in eight (thirty-seven per cent.). In two of these this took place in four days, in three in six days, and in one not until after the lapse of twelve days. In such cases the sedative action of the drug may be restored by ceasing its continuous administration and lengthening the interval between the doses. Its hypnotic action has been much more prompt and less liable to be weakened by tolerance. The most tardy effect of the drug and at the same time the most tenacious is its action upon the stomach, manifesting itself first by anorexia, later by vomiting and loss of flesh, phenomena upon which we have already laid sufficient stress."

#### TREATMENT OF THE TOXÆMIA OF PREGNANCY.

In the February number of the *American Journal of the Medical Sciences*, E. P. DAVIS, of Philadelphia, contributes a valuable paper on this topic.

The treatment of the toxæmia of pregnancy must be instituted with reference to promoting the action of five excretory organs,—namely, the kidney, liver, intestine, skin, and lungs. The usual precaution of limiting the patient's diet largely to milk is, of course, indicated; but when nutrition suffers from the monotony and distastefulness of milk, there should be no hesitation in giving a more liberal diet to preserve the patient's strength. Fish and oysters, the white meat of fowls, fruits in abundance, and the more digestible sorts of bread, fresh and nutritious, form a usually acceptable diet. Pure water must be taken, but not in excess, as it is possible to seriously embarrass the kidneys by a sudden increase in the amount of fluid taken. Tea had better be omitted, while the diuretic effect of coffee is sometimes of value.

The literature of the subject affords abundant evidence that the liver has an important part in the production of this condition. However theory may dictate regarding treatment, the writer has no doubt of the practical advantages following the occasional use of calomel and soda to promote the action of the liver and kidneys as well. This should be followed by a purgative producing free and liquid stools. Salts of potassium should be avoided,

because of the irritant properties possessed by potassium when introduced into the fluids of the body. Colocynth is a convenient and efficient drug for this purpose. The bath and pack are the only efficient remedies which experience suggests in promoting the excretory action of the skin. Where the hot bath is depressing, the warm bath, accompanied by the ingestion of a small quantity of hot water, is of decided value. This may well be taken just before retiring, thus avoiding the danger of exposure to cold following the bath. Light woollen should be worn next the skin in summer or winter. In addition to the bath, in severe cases the pack in sheets wrung out of hot water, or the hot-air bath, is of the utmost value. Further, where a condition of moderate toxæmia exists, or continues a long time, yielding to treatment with difficulty, great benefit will be found from gentle massage; this should include the limbs and back, avoiding the abdomen. It may well be given at night, followed by the bath, and often secures for the patient a refreshing sleep.

The importance of fresh air in abundance for these cases is sometimes overlooked; in summer, conditions for obtaining good air are very commonly present, but in winter it is necessary to attend to this point.

Especial attention is called to the diagnosis of toxæmia from the general condition of the patient's nervous system. A careful and experienced observer can detect a very different condition in the toxæmic patient from the simple nervousness and apprehension of the pregnant woman; the condition is that of intoxication, varying in degree. Thus, we recall the case of a woman admitted to a hospital, and soon after taken with severe eclampsia. After a dangerous illness of several days she recovered, having been utterly oblivious of her coming to the hospital and of her illness until she was virtually convalescent. She had been as completely intoxicated as if drugged with alcohol or opium. An interesting manifestation of this condition is afforded by the peculiar mania often seen in eclamptic cases; thus, in one case referred to in this paper, for several days before her death her delirium was a very pitiable form of mania.

The clinical picture afforded by the toxæmic condition must impress itself upon the careful observer as one of an intoxication showing itself by a disordered nervous system. We regard as cardinal symptoms of this condition the nervous phenomena already described and diminished excretion. Upon these a diagnosis is to be made and the treatment of the case

conducted. As regards the cardinal principles of treatment, we are opposed to the use of sedatives and narcotics; the patient's need is for elimination, and that must be secured as promptly as possible. The sedative effect of eliminative treatment is often remarkable. Thus, in the case reported above, she asserted that the most enjoyable features (physically) of her life during the last weeks of her pregnancy were the warm bath taken at evening and the few hours of refreshing sleep which followed. She also recognized the distinct benefit obtained by free purgation.

In the face of threatened eclampsia, our duty lies in prompt emptying of the uterus. Here an anæsthetic is often requisite at the time of labor, and the writer's preference is for chloroform. The danger of delay in emptying the uterus is too familiar to require mention, and when the patient's symptoms are not relieved by thorough elimination from the intestines, skin, kidneys, liver, and lungs, the time for delay is certainly past, and we shall not be faithful to our duty if we allow a patient to go further in this dangerous condition. The recent literature of eclampsia contains striking evidence of the value of terminating the pregnancy by dilating the uterus and removing the foetus. If this be done under anæsthesia and with antiseptic precautions, the results are sufficiently good to command a careful attention for this method of treatment. It is a mistake to employ drugs which tend to depress the patient and favor the occurrence of œdema; such is pilocarpine. When stimulation is needed, benefit follows from alcohol, digitalis, and in cases of eclampsia, when labor has terminated and exhaustion is threatened, in the hypodermic use of strychnine.

#### OXYGEN IN THERAPEUTICS.

J. N. PITT writes on this subject in the *Medical Press and Circular*. He sums up his article with the following conclusions:

1. The inhalation of oxygen is of marvellous value in some cases of severe pneumonia, especially when there is much lividity and cardiac failure and at the crisis.

It fails in other cases, and the writer is inclined to suggest that where the condition is one mainly of cardiac failure and collapse, more benefit is obtained than in cases where the serious condition is especially due to a wide-spread œdema or bronchitis; but on this difference between the two classes of cases he would be glad to learn the experience of others.

Some cases of severe bronchitis and asthma have, however, been benefited by oxygen. In one case of acute upon chronic bronchitis in an elderly lady, he saw some, though not very marked, relief of the dyspnoea.

2. In cases of empyema, pneumothorax, and pleuritic effusion great relief can be afforded to the dyspnoea and cardiac failure until operative measures are undertaken.

3. Cases of feeble patients with phthisis may be relieved, but more often there is no marked change.

4. Cases of weakly convalescents and feeble cardiac cases will often derive great benefit, and inhalations may be given periodically for weeks; but oxygen will not restore to health; it must simply be used as an adjuvant.

5. Cases of chlorosis, pernicious anæmia, and leucocythæmia receive great temporary benefit, but the oxygen must be supplemented by other drugs.

6. Conditions of asphyxia and lividity from respiratory engorgement due to cerebral failure and also coma from various causes may be relieved.

7. Its value in uræmia, though insisted upon by French writers, is still problematical.

8. It may also be of value in diminishing the risks of anæsthesia.

#### BACTERIAL TOXINES AND ANTITOXINES.

A few years ago BRIEGER (*Münchener Medizinische Wochenschrift*, 1893, Nos. 24 and 25) and his followers assumed that the bacterial poisons are ptomaines or poisonous bases. It has been seen, however, that though these bodies are of some importance, the specific action of pathogenic bacteria does not depend on them. A few years later Brieger, Fränkel, Hankin, and Martin proved the existence of toxalbumins in artificial cultures of pathogenic bacteria, and it has since been shown that these bodies are the specific bacterial poisons. It may be mentioned here that Roux and Yersin were the first to show that the specific diphtheritic lesions may be produced by sterile bacterial solutions. The bacterial toxins have been described as toxopeptones and toxalbumoses, but whether this is true is still a matter of doubt, and as it is possible that the toxins are thrown down with pre-existing albumoses or peptones, it is better to adhere to the name toxalbumins. Now, Brieger, Fränkel, and others assumed that these toxalbumins are formed from the albuminous substances of the body by means of bacterial fermentation. Buchner, however, considers them to be direct products of the bacterial

cells, and proved this for tetanus by growing the bacillus on a solution of asparagin. Filtered asparagin cultures produced the typical tetanic lesion in animals. The toxalbumin could not have been formed by a splitting up of the asparagin, but must have been derived directly from the bacterial plasma. We cannot as yet separate these toxalbumins in a pure state, since alcohol, ether, etc., will also precipitate other albuminous bodies. We find, however, that they react like the enzymes and so-called alexines or protective proteids. In a moist condition, a temperature of 55° to 70° C., as a rule, destroyed them, while in a dry state they resist much higher temperatures, and substances which limit the action of water will increase the resistance of these bodies (neutral salts, especially the sulphates of alkaline bases). Their physiological action in most cases is slow. Thus, the toxine of tetanus produces the typical symptoms in from eight hours to two or three days.

Now, what do we know of the antitoxines? 1. Their action varies with the quantity administered. 2. It has been assumed by Behring and others that the antitoxines and the toxins neutralize each other, forming a new atoxic compound or substance. This is not true, because if we administer to a mouse a mixture of toxine and antitoxine, in such proportion that they exactly "neutralize" each other, the animal does not succumb, but at the same time a certain amount of immunity is established. The antitoxine is, therefore, stored up in the organism after the toxine has been rendered harmless. It has been assumed that the toxine has been destroyed by the antitoxine, but that the latter remains behind in an active condition. But if this were so, then one and the same quantity of antitoxine should be able out of the body, in time, to destroy a further quantity of toxine than it has already destroyed. Experiment shows that this is not so. If we make an exact mixture of toxine and antitoxine, such that when injected into mice it will not produce death, but is just neutral for mice, and then inject it into guinea-pigs (which are more susceptible towards tetanus than mice), we shall find it still poisonous for the same weight of guinea-pig; hence the toxine and antitoxine do not react directly on each other either *in vitro* or *in corpore*. The antitoxine acts by immunization, and has no actual curative action, and since guinea-pigs are more sensitive, they require a larger dose of antitoxine than mice. Buchner concludes by saying that the antitoxines are probably bacterial products. This, like all Buchner's work, is

extremely suggestive, and opens up fresh questions in regard to the true appreciation of the serum or antitoxic treatment.—*Medical Chronicle*, vol. xix., No. 1.

#### THE EARLY TREATMENT OF CARCINOMA UTERI.

KELLY contributes a valuable summary of this subject to the *New York Medical Journal*.

The large number of cancer cases constantly applying to Kelly for relief have induced him for the past three years to adopt certain stringent rules with regard to his own patients, which he has taught for the same period in his lectures at the Johns Hopkins Hospital.

The end in view is twofold. First, by treating cervixes liable to become cancerous, and thus prevent the formation of this neoplasm; and, secondly, to detect cancer of the cervix at a sufficiently early date to successfully eradicate the disease.

1. It is the duty of the obstetrician to see each patient at his office from two to three months after her confinement, and there to examine and make a careful record of the condition of the pelvic structures, stating accurately what lesions have been produced by the confinement.

2. Cervical lacerations should be carefully described, noting the position and depth of the tear and the appearance of the lips. Lacerations require no treatment when the lips are thin, uninfiltated, and lie together. Thick, infiltated, and everted lips associated with cervical catarrh call for depletory treatment, followed by repair of the laceration.

3. Every woman who has passed thirty-five years of age and has borne a child should have this examination made without delay by a competent physician, and if the cervical lips do not appear perfectly sound she should be kept under observation and examined at intervals of from six to eight months.

4. Every woman over thirty-five, with a cervical tear, should be examined at least once a year for ten years, or longer, if the appearance of the lacerated area is not perfectly healthy.

5. These rules apply with special force to patients whose family history shows a marked inclination to cancerous diseases.

If these rules are conscientiously observed there is not a shadow of doubt but that thousands of lives would be saved yearly in this country alone by timely interference with a disease so markedly local and accessible in its origin.

The author states that he feels that while we

are searching for a cure for cancer, the line of progress in the immediate future for the gynecologist is clearly in the direction of prophylaxis and anticipation, either preventing or discovering the malady in its earliest stages.

#### THE TREATMENT OF ITCHING.

In a valuable paper upon this important clinical question, BRONSON, of New York, contributes his views to the *Medical Record*. In the class of remedies to allay local irritations he includes all such remedies as directly tend to prevent itching. These will include, first of all, such as directly tend to prevent scratching. To admonish the patient to refrain from this is usually of little avail. Restraint may be possible during waking hours, but at night, when the trouble is always at its worst, and especially during the state of somnolence midway between sleeping and waking, no will-power can prevent it. It can only be avoided by first mitigating the *besoin* through the aid of antipruritics. It is of some advantage, however, for the patient to know that relief may often be obtained through other tactile diversions than those which are effected by the sharp finger-nails, as, for example, simply by firm pressure of the part, or by stroking the itching surface with the finger-pulps, or with a soft cloth or brush (especially if first lubricated with vaseline), using some pressure, but without rapid motion. Irritating contacts of all sorts should be most scrupulously avoided. Attention should be given to the under-clothing. Woollen clothing is almost never tolerated. The clothing next the skin should be of the softest material,—cotton, linen, or possibly silk. Of further importance is the avoidance of immoderate temperatures, whether of heat or cold, and especially of sudden changes, which are peculiarly apt to excite itching. The temperature of the surface should be kept as equable as possible.

The local excitants may not only be extracutaneous, but also intracutaneous. Often they are incidental to the trophic changes of one of the so-called pruriginous diseases, in which case the treatment of the pruritus is included in that of the disease of which the itching is a symptom. When they arise from toxic materials conveyed to the skin by the blood, we endeavor to eliminate these materials by depurative remedies, more especially diaphoretics and diuretics, while disturbances of the nerve-terminals that are directly transmitted from the interior are best relieved by means of the substitutive irritants.



These measures failing or proving insufficient to secure the desired rest, it becomes necessary, in pursuance of this object, to have recourse to certain sedatives. Some of these, that are used internally, are designed more particularly to neutralize the hyperæsthesia; others, including both internal and external remedies, serve rather to directly annul the pruritic excitement.

*Sedatives.*—Used internally these are apt to be disappointing. The degree of general sedation that is required to affect the nerves of the skin in so intense a disturbance as pruritus often is, affords a sufficient reason why this method of treatment is usually objectionable. Further than this, the depressing and atonic after-effect on the nervous system tends to exaggerate the general hyperæsthesia, which is already essentially an atonic condition, and thereby increase the tendency to itching. Especially objectionable on this score are most of the narcotic sedatives. The bromides, on the other hand, are often indispensable, and may be required in liberal doses. It is important to avoid the enervating effects of loss of sleep, and for this purpose sulphonal or some other hypnotic is occasionally needed. In connection with this class two internal remedies, which have been especially recommended by Bulkley, are here worthy of mention. They are cannabis indica and gelsemium. The former is known to be a cutaneous anæsthetic as well as analgesic, and by virtue of the former quality should be useful in pruritus. Whether its usefulness in this disease is chiefly owing to this or to another quality, which will be referred to later in connection with the sensory stimulants of the next following class, is uncertain. Gelsemium has proved of benefit in some cases (more especially, according to the writer's experience, in protracted cases of urticaria), but the doses required are so large as to forbid their long continuance. It will be referred to again under motor depressants. Finally, the antipyretics phenacetin and antipyrin have some effect upon pruritus, though less than upon the sensation of pain.

The local sedatives used in this disease are generally far more satisfactory in their effects than the remedies just considered, especially where the disease is limited in extent. They are for the most part agents that tend to retard vital action. The fact that many of them are antiseptics probably implies something more than mere accidental coincidence. Under both aspects their effect is to depress, if not impair, vitality; incidentally, they are nerve-depressants. Acting upon the superficial

nerve-endings, they tend to retard the so-called "nerve vibrations" or molecular movements. How they exert this action through the intact epidermis is somewhat difficult to understand, but of the effect produced there can be no question. Typical among the remedies of this class is the group which includes carbolic acid, salicylic acid, salol, and thymol, all antiseptics, and all having undoubted virtues as antipruritics.

Carbolic acid, the most important member of this group, is perhaps, all considered, the most reliable and most generally useful antipruritic which we possess. It was well named by Unna "the opium of the skin." In pure solutions, or in combination with other remedies, and even when comparatively weak, its quieting effect on pruritus rarely fails. The two- to five-per-cent. solutions which are most commonly employed, though often of benefit, do not, however, bring out the full antipruritic effect of which this drug is capable. Watery solutions require to be used of less strength than those in oils or fats. They are more apt than the latter to be corrosive, and also, being more quickly absorbed, are more liable to be followed by general toxic effects. For these reasons carbolic acid is preferably employed in oils or ointments, for, though the absorption is slow, the effect passes off less quickly, and the stronger solutions are comparatively safe. With proper precautions as to its use as an oily solution of from twelve and a half to twenty-five per cent., it may be used with perfect impunity, provided the area to which it is applied is of moderate extent.

The following "antipruritic oil" has been largely employed by Bronson for years, both in the local and in the so-called universal forms of the disease, with no more untoward results than now and then a trifling dermatitis, when through oversight the patient has been allowed to make the applications too frequently, or has continued them too long. The formula is,—

R Acid. carbolic., ʒi to ʒii;  
Liq. potass., ʒi;  
Ol. lini., ʒi. M.  
Sig.—Shake before using.

An alkali and an effective keratoplastic agent (linseed oil) serve both as adjuvant and corrigent to the action of the carbolic acid. To correct the disagreeable odor of the linseed oil, a drop or two of the oil of bergamot may be added.

Salicylic acid and salol, though less energetic in their effects, act similarly to the carbolic acid. They may be used in combination

with other drugs, or by themselves in oil or ointments, or sometimes alcohol, and also in superfatted soaps.

Thymol, which is a cutaneous anæsthetic as well as antiseptic, is also in certain cases of universal pruritus an admirable antipruritic, but, on account of its irritating effect, cannot be used where the skin is very sensitive. It is well combined with menthol in a three-per-cent. (of each) alcoholic solution. Doubtless other remedies of like character might with advantage be added to this group.

The corrosive chloride of mercury is another well-known antiseptic which has also a reputation as an antipruritic. It is difficult to explain the latter action, except by regarding this agent as a local sedative by virtue of its hostility to all forms of life and its ability to retard excessive vital action. The marked anæsthesia of the skin that is produced by concentrated solutions is doubtless due to this property.

Certain other local sedatives of the skin, though not in the antiseptic group, yet apparently owe their effect to a similar retardation or arrest of molecular movement in the affected sensory nerves. Such is cocaine. The decided anæsthetic action of this drug upon mucous membranes, upon abraded cutaneous surfaces, or when used subcutaneously, would seem to indicate it as a specific in pruritus. For two reasons it has proved disappointing. First, because of the difficulty of making its action felt through the intact epidermis; and, second, for the reason that any tissue, when long or frequently subjected to its action, suffers a certain atony and enervation that seem to render it more predisposed than before to the irritation or irritability the drug was intended to alleviate. This latter is a common effect of prolonged use in the eye or nose and after prolonged use in pruritus progenitalis. These objections by no means preclude its use entirely. It is often resorted to with most satisfactory results in localized forms about the mucous orifices, upon raw or abraded surfaces, and sometimes with appreciable effect even where the epidermis is apparently intact.

Other sedatives of this class are cyanide of potassium (1 drachm; water, 1 pint), chloroform (1 drachm; glycerin, ½ ounce; water, 8 ounces), and camphor in combination either with an inert powder or with chloral, the mixture being properly diluted. It is probable, however, that the last-named remedies act not only, often not chiefly, as sedatives, but partly as substitutive irritants. Of a somewhat similarly complex nature is the antipruritic effect of hot

water, which calms the nervous excitement, apparently not only by direct sedation of the sensory nerves, but also by its general relaxing effect, removing pressure or constriction of the nerves; and, furthermore, at the beginning, at least, it is a powerful substitutive irritant. To be effective, the temperature should be over 100° F., or as hot as can be tolerated, and the applications should be prolonged for several minutes.

It is evident that the impaired conductivity of the sensory nerves with hypopselaphesia, which, as shown, is in greater or less degree an essential condition of the pruritic sensation, though it is not necessarily antipathic to the hyperæsthesia, nevertheless affords special and independent indications for treatment. While the condition of hyperæsthesia calls for depression, or at least repression, that of hypopselaphesia demands a certain kind of stimulation; hence we distinguish in the therapeutics of pruritus a third class of remedies.

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#### THE TREATMENT OF FIBRINOUS PNEUMONIA BY LARGE DOSES OF DIGITALIS.

BELLOTTI (*Raccoltore Medico; Rev. Internationale de Bibliographie Médicale*) confirms his previous experience, and that of Filk, Petrescu, and other observers, regarding the good results obtained in the treatment of fibrinous pneumonia (diplococcus of Fraenkel). The author advises the simultaneous use of a milk diet and, in certain cases, general bloodletting. Large doses of digitalis are necessary in pneumonic patients in proportion to the gastric catarrh present and the diminution of hydrochloric acid, both of which phenomena tend to lessen the absorption of material by the portal circulation. On the other hand, certain active principles of digitalis exercise on the liver a special function, and a decided one on the pneumotoxines elaborated by the diplococcus. The medium dose employed by the author was 4 grammes of digitalis, in the form of infusion, administered in separate doses. He advises, again, the addition to the infusion of a little mucilage of gum arabic and laudanum, in order to avoid the untoward effects that may arise.

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#### GUAIACOL PAINTINGS AND THEIR ANTI-PYRETIC ACTION.

Guaiacol paintings have been employed in twelve febrile cases by MONTAGNON (*Loire Médicale*, No. 8, 1893; *Rev. Intern. de Bib-*

*liog. Médicale*). The method caused a lowering of the bodily temperature, but the effect was not constant and seemed to depend upon individual susceptibilities, and the part of the body used for the application of the medicament. The groin appeared to be the most favorable region for the guaiacol paintings. Generally, the reduction of the temperature occurred in one hour after the application of the remedy, and lasted from two to three hours; after this the temperature began to ascend again. The most effective doses were 2 grammes, sometimes 3 grammes, never going beyond this limit. The local use of the drug, according to the author, is badly borne by advanced phthisical patients, but better tolerated in the earlier stages of the disease. The action of guaiacol seems to be a general one and independent of the true cause of the fever; the effects are not due to the absorption of the medicament by the lungs. The paintings were frequently accompanied with sweating, chills, and tremors, especially in advanced cases of phthisis laboring under adynamic conditions. In these cases the reduction of the temperature was followed by phenomena of collapse. After the employment of the drug, the patients complained of general malaise, and never felt relieved. The author further affirms that untoward effects upon the skin, under the influence of guaiacol, are rare, provided the remedy is pure and in applying it not much friction is practised. Children are more susceptible to guaiacol than adults. The drug acts in a similar manner—that is, as an antipyretic—when administered by rectal injections.

#### THE VALUE OF VARIOUS DIETS IN CHRONIC BRIGHT'S DISEASE.

In the *Medico-Chirurgical Transactions*, of London, DR. W. HALE WHITE contributes a valuable paper upon this subject. After giving the opinion of a large number of well-known authorities upon the value of diet in chronic Bright's disease, he says that he might quote many other authors, but thinks that he has referred to sufficient to show that they are by no means unanimous as to the best diet to give patients suffering from chronic Bright's disease. For this reason, and also because many have used too few cases for the results to be conclusive, and others have relied largely on *a priori* considerations, it seemed to him worth while to carefully analyze the urine and note the symptoms in a series of cases. We know so little that is certain about the cause of the

serious symptoms of Bright's disease that it is only by actual trial that we can find out whether any particular diet is valuable.

Milk is very frequently recommended, and it has been claimed that it will do good, for the following reasons:

1. It is said to diminish the amount of albumin. In the first place, the figures the writer gives later on show that this is very far from being always true, at any rate in chronic interstitial nephritis; and some of Grainger Stewart's cases point in the same direction, for on ordinary, large, milk, or low diet the albuminuria remained unchanged, and even partaking abundantly of eggs did not increase it. Such experiences as these mean either that the reported cases in which it is said that the albuminuria was diminished by a milk diet belong to a different category, or else that they were improving in this respect at the time that the milk diet was started.

Then, secondly, even if milk did decrease the albuminuria, we have in many cases no proof that this is of any benefit. Patients who are very ill may lose only one or two grammes of albumin a day in the urine. This cannot of itself be of much importance; the absorption from the intestine of a very little more albuminous material would, if not lost in some excretion, quickly make up the deficiency. Then, again, people who suffer from cyclic albuminuria are often none the worse for it, nor does the loss of albumin in other ways, as by epistaxis, or by means of a discharge of pus, produce any symptoms comparable to those of Bright's disease. Indeed, the majority of persons who pass albumin in their urine have not got Bright's disease at all, but are suffering from heart-disease, pyuria, specific fevers, etc. Lastly, albuminuria is probably to a large extent only a local sign indicating disease of the secreting renal epithelium, and not a general blood condition. All these considerations indicate that, even in cases of Bright's disease in which the loss of albumin is considerable, this of itself is not really quite so important as is usually thought. Surely, if it were, restricting the diet to food containing less albumin than ordinary diet ought to be harmful to the patient, for not only would he be losing more albumin than in health, but he would be taking in less, and the author later on shows that, if we may assume that when more proteid is taken by persons suffering from increased albuminuria, the increased amount of proteid taken very much more than compensates for the increased albumin passed in the urine, and in some cases of Bright's disease the albuminuria is even less

on full than on milk or farinaceous diets. No doubt the restriction of the saccharine food in diabetes would by analogy lead us to restrict the albuminous food in albuminuria, but analogical reasoning of this sort is most fallacious. It is quite sure that the significance of albuminuria in Bright's disease is overestimated, and treatment directed immediately to it is unsound, especially when, as in the case of milk diet, although it frequently fails to diminish the amount of albumin passed, it often sets up loathing and disgust.

2. Some authors urge that milk is easily digested and absorbed. Often this is directly contrary to fact. Many writers have noticed, the author among the number, that patients who have chronic Bright's disease and are fed solely upon milk often suffer from indigestion; and, as just mentioned, they get to positively loathe the milk, which also has the additional disadvantage that it leads to constipation.

3. It is stated that milk does not irritate the kidneys; but before this statement can have any value it must be shown that ordinary food does irritate them, and this has not yet been done. It is curious that if milk is such a particularly bland and unirritating substance to the kidneys, these organs should, in young children, be so frequently streaked with urates.

4. Milk is often said to be diuretic. For instance, the patient whose case is related by Drs. Sparks and Mitchell Bruce passed more urine on a milk diet than on ordinary diet together with a large amount of water; but as he passed more urine in this combination than on ordinary diet alone, it is highly probable that the diuretic effect of the milk was in part due to the quantity of water in it. Some of the cases related by White show that milk is usually, but not invariably, diuretic. Of Granger Stewart's cases, milk did not act as a diuretic in those with parenchymatous nephritis, nor did it in the chronic cases. Thus we see that milk is neither a powerful nor a certain diuretic, and we must remember that, even if it were, it is doubtful whether it would be a good thing to give diuretics in Bright's disease.

5. Lépine has urged that milk is beneficial for Bright's disease because it contains no toxic substances. But, for all we know, it may contain poisonous substances which, although excreted in health, are retained in the blood in Bright's disease. His supposition that it aids the elimination of toxic substances in Bright's disease is without a shadow of proof. It seems futile to argue in this way about the toxine of Bright's disease when we do not know what it is.

The view that a diet containing very little proteid is beneficial for Bright's disease is probably due to a lingering survival of the false belief that the urea which is not excreted in Bright's disease is the cause of the symptoms of uræmia.

We thus see that all the *a priori* considerations which have been put forward for giving milk in chronic Bright's disease have in themselves no value, and similar objections could be urged against the reasons which have led to the belief that other particular diets would be beneficial. Therefore all that is left to us is to examine cases.

Holding such views, therefore, he proceeded to analyze ten cases which were under his care, giving them three forms of diet,—a milk diet, consisting of three pints a day; a farinaceous diet, consisting of twelve ounces of bread, one ounce of butter, two pints of milk, and one pint of beef-tea; and a full diet, consisting of twelve ounces of bread, one ounce of butter, half a pint of milk, half a pound of potatoes, and six ounces of meat. Sometimes rice-pudding was made with a half-pint of milk, or the patient was given half a pint of mutton-broth. Tea and sugar were allowed in both the farinaceous and full diets. The points which he examined into were the quantity of urine passed, its specific gravity, the amount of albumin, the amount of urea, and the general condition of the patient. He reaches the following conclusions:

We see that, on the whole, an ordinary full diet is the best for this malady, for,—

1. It does not increase the liability to uræmia.

2. The general condition of the patients improves upon it, and they feel stronger and their circulation is better when they are taking it than when they are on milk or farinaceous diet.

3. A saving of albumin to the body is effected by it, for, even if the output of albumin is increased, which it very often is not, more than sufficient extra proteid is taken on the full diet to compensate for any extra loss in the urine, assuming, and there is no evidence to the contrary, that more proteid is absorbed upon full diet than upon milk.

4. The effect of diet on the excretion of urea is too uncertain to be any guide to us, but there is no evidence that in this respect full diet is harmful.

5. There is no evidence that full diet contains, or specially leads to, the formation of any toxic principles which are harmful in chronic Bright's disease.

6. This diet prevents the repugnance felt by

these patients to farinaceous diet and their loathing of milk.

The only thing against it is that rather less urine is passed upon full diet than upon milk or farinaceous diet. But this difficulty can be overcome by drinking an extra quantity of water daily, and it must be remembered that in many cases of chronic Bright's disease diuresis is already profuse. It may be well to point out that as the ten cases which form the basis of this paper were all patients who were sufficiently ill to require admission to the hospital, it is quite possible that some of the conclusions might not apply to patients who had Bright's disease in a mild form or to those accustomed to overeating.

#### EXCLUSION OF DAYLIGHT IN THE TREATMENT OF SMALL-POX.

FINSEN (*Hosp. Tid.*, No. 27, 1893) has made some observations on the effect of light on the skin. He referred to the good results obtained by Black and others by the exclusion of daylight in the treatment of small-pox, but argued that, as Widmark has shown that it is the ultra-violet rays which have the strong chemical action, it is not necessary to exclude the daylight, but by using red curtains tightly drawn, or red window-panes, the injurious effects of the light can be prevented. The correctness of this hypothesis was proved by Svendsen, of Bergen, who last summer treated four cases of small-pox in unvaccinated patients by covering the windows with thick red woollen curtains. The patients escaped the suppurative stage; there was no rise of temperature, no oedema. The patients passed from the vesicular stage, which was slightly prolonged, into convalescence, and escaped scarring.—*British Medical Journal*, February 17, 1894.

#### PENTAL.

PHILLIP (*Zeitschrift f. Kinderheilk.*, Bd. iii., 4, 1893) states that during the preceding twelve months chloroform and pental were the only anæsthetics used in the Kaiser Friedrich Children's Hospital, Berlin, local anodynes having been found impracticable in the case of children. The following were found to be the principal advantages of pental: Extraordinarily rapid narcosis; rarity of a period of excitement, which, if present, ceased with absolute narcosis; immediate recovery of consciousness after removal of the mass; and absence of any

unpleasant after-effects, such as are caused by chloroform. No action on the heart was ever observed, but in some patients arrest of respiration and cyanosis occasionally appeared, when removal of the mask sufficed to restore the natural color. The author attributes the cyanosis, not to any toxic action on the respiratory centre, but to tonic contractions of the diaphragm and glottis. In twenty-one cases the urine was subsequently examined for albumin, but only once was a trace found, which disappeared on the third day; this occurred in a tuberculous child after a prolonged operation. The majority of the operations lasted from ten to thirty minutes, from thirty to sixty cubic centimetres of pental being required. In conclusion, judging by one thousand narcoses, pental is, with certain exceptions, always able to replace chloroform, being, moreover, less dangerous and without after-effects. In the above-named hospital pental is now looked upon as an indispensable drug, but during its use all precautions should be taken as when administering chloroform.—*British Medical Journal*, February 17, 1894.

#### THE TREATMENT OF SCLERODERMA.

According to the Berlin correspondent of the *Medical Press and Circular* for February 14, 1894, at the last meeting of the Dermatological Society, SCHUTTE showed a man whose illness began with pain in the knees and elbows, and with the formation of red, painful rhagades. The disease progressed slowly over the lower extremities and the right arm, and diminished greatly the usefulness of the limbs. Several methods of treatment had only a passing effect. On admission, the skin over the lower extremities and the buttocks was smooth, shining, hard, and firm; bright and dark pigmented spots were irregularly scattered about. The patient could scarcely move the limbs; he mounted the steps as if the knees were ankylosed. The temperature of the skin was lowered. The treatment consisted of lengthened sitz baths, with succeeding massage with five-to ten-per-cent. salicylic vaseline. The salicylin was increased as improvement progressed. The patient gradually regained power of movement of the extremities. A small quantity of salicylic acid could be determined in the urine, so that some must have been absorbed through the skin. The favorable influence of such treatment has been previously demonstrated in the case of a female shown to the Society. In that case the improvement had been maintained.

The speaker also showed a little girl, aged ten, in whom the method of treatment described had had good results. The case was, however, less convincing, as the child had been treated as an out-patient and electricity had been employed on account of facial hemiatrophy.

LEWIN thought, as regarded the result of treatment of scleroderma, that the spontaneous variations in the complaint should be taken into account.

LASSAR replied that the case showed the slowly progressing improvement was opposed to one independent of treatment.

### PRESCRIPTIONS.

For impetigo :

℞ Adipis,  
Vaseline, of each, ℥iii;  
Acidi salicylatis, gr. vii;  
Zinci oxidi, ℥iss;  
Plumbi diacetatis, gr. v. M.

The following is also useful in impetigo :

℞ Vaseline, ℥iiss;  
Acidi borici, ℥ss;  
Zinci oxidi, ℥ss;  
Acidi salicylatis, gr. vii. M.

An antiseptic powder :

℞ Iodoform, ℥xxxi;  
Pulv. benzoini, ℥xxxi;  
Quinquinae, ℥xxxii;  
Magnes. carb., ℥xxxi;  
Ol. eucalypti, ℥iv.

Sulphur lotion for acne :

℞ Sulphuris sublim., ℥iss;  
Sp. camph., ℥iv;  
Aq. destill., ad ℥ii.

Lotion for acute eczema in infants :

℞ Lot. nigræ, ℥iv;  
Liq. calcis, ℥iv;  
Mucil. tragacanth, ℥i.

An application for recent ringworm :

℞ Thymol, ℥ss;  
Chloroformi, ℥ii;  
Ol. olivæ, ad ℥i. M.

To be applied night and morning.

For laryngeal phthisis and dysphagia :

℞ Cocainæ hydrochloratis, gr. x;  
Acidi borici, gr. iv;  
Glycerini, ℥xv;  
Aq. destill., ad ℥i. M.

To be applied to the throat when necessary.

A local application in diphtheria :

℞ Acidi salicylatis, 3 parts;  
Alcohol, 20 parts;  
Resorcin, 2 parts;  
Glycerini, 10 parts. M.

The affected parts to be touched twice daily with the application.

A sedative cough mixture in phthisis :

℞ Codeinæ sulph., gr. iii;  
Liq. atropiæ sulph., ℥xii;  
Liq. strychniæ, ℥i;  
Syr. tolutani, ℥iss;  
Infus. rosa acid, ad ℥vi. M.

A tablespoonful in a wineglassful of water every four or six hours.

—*Medical Press and Circular*, February 14, 1894.

### ON SOME CASES OF ACUTE INTUSSUSCEPTION IN CHILDREN.

In the *British Medical Journal* for February 17, 1894, BARKER concludes an article with the above heading with the following statements :

It is interesting to note that out of the six operated on, three at least could not possibly have been reduced by inflation or injection; for in one the intussusception was high up in the small intestine, and in the other two several inches of ileum were prolapsed through the ileo-cæcal valve. In all the seven it may be said, then, that the injection failed, and in three it must have failed. In spite of this, laparotomy saved three out of the six operated on. But when we come to examine the causes of death in the three who died after operation, it is clear that the result was due in each case to the operation not having been done soon enough. In one of them, when the abdomen was opened, the intussusciens was sloughing largely, in two places forming wide perforations. In another the gut was not actually sloughing, but was rotten from strangulation and incapable of being reduced. In the third a small slough was in process of formation at the time of operation, which gave way a day later, with fatal perforation. All these cases might have been saved by a somewhat earlier laparotomy; they could not have been saved by injection.

In addition to the cases now related in his present article, Barker has collected all those of children treated for acute intussusception in the surgical wards of University College Hospital from the year 1877 to the end of 1893. These, with seven of his own, form a list of twenty-five cases, all under thirteen years of age. Of these, thirteen recovered, twelve died. The treatment adopted in nineteen was either

manipulation (one) or injection of air or water (seven), followed in case of failure by laparotomy (eleven). In five cases laparotomy was done without any previous attempts at reduction; of these, two were of the enteric variety; four died, one recovered.

Of the nineteen cases where injection and manipulation had been tried, followed by laparotomy where necessary (eleven), seven died and twelve recovered. Of these twelve recoveries, seven followed manipulation or injection alone, five followed laparotomy where these had failed. Of the eight fatal cases, seven deaths followed laparotomy, one followed repeated injection. Taken in the gross, there were therefore seventeen laparotomies with eleven deaths, and eight injections or manipulations alone with one death.

From all this it would appear that the practice at University College Hospital for many years has been to try injection of air or water in all cases not recognized at once as desperate, and when these means have failed, to proceed to laparotomy at once. By these measures thirteen out of twenty-five cases have been saved, and probably a larger number would have recovered if the laparotomies in several cases had been done earlier.

Of course the majority of the recoveries are credited to the injection method, inasmuch as laparotomy was only resorted to when the latter had failed. In other words, abdominal section was only done in bad cases; indeed, in several cases the condition was desperate. In the face of this fact it is encouraging to note that out of seventeen cases treated by laparotomy, six recovered; although several were in a very bad condition at the time of the operation, in some the bowel being actually gangrenous. If we subtract these cases from the list, the proportion of recoveries is fairly good considering the gravity of the condition.

The conclusions, then, which seem deducible from a study of these and many other records, appear to be as follows:

1. That in all cases of intussusception in children injection of water or manipulation should be at once resorted to *if the patient is seen within a few hours of the onset of the strangulation.*

2. That if these means fail after a fair trial, not too much prolonged, laparotomy should be at once done as the safest treatment.

3. That there is a certain proportion of cases among all the varieties of intussusception which no amount of injection will relieve, or in which injection would be dangerous, and these can only be dealt with by opening the abdomen.

#### EXPERIMENTAL RESEARCHES ON ANTISEPTICS IN OCULAR OPERATIONS AND ON THE BACTERIOLOGY OF THE CONJUNCTIVAL SAC.

MARTHEN (*Deutschmann's Beitrage zur Augenheilkunde*, 1893) continues the work of Hildebrandt and Bernheim on this subject (already abstracted in previous numbers of the THERAPEUTIC GAZETTE), and concludes that the number of microbes in a normal conjunctiva is not very great, and even a slight degree of catarrhal inflammation does not greatly increase their quantity. On the other hand, an apparently normal conjunctiva may harbor numerous micro-organisms, some of them of virulent property. This is especially true of the ciliary margin. According to Marthen, it is impossible to completely sterilize the ciliary border, even for twenty-four hours, with ordinary preparations,—sublimate, 1 to 1000 or 1 to 2000; nitrate of silver, two per cent. However, a notable diminution in the virulence of the germs is obtainable, greater than that secured by mechanical means,—e.g., bathing with a physiological salt solution. If an operated eye is bandaged with non-antiseptic materials, it rather favors the development of microbes, because it prevents their natural expulsion by the movements of the lids. The tears, according to Marthen, have the property of preventing the development of certain microbes, but others are unaffected,—for example, the bacillus prodigiosus. The experiments made with the aqueous humor from animals have not yielded positive results.

#### SUBCONJUNCTIVAL INJECTIONS OF SUBLIMATE IN OPHTHALMIC PRACTICE.

PÉRINOFF (abstract *Archives d'Ophthalmologie*, December, 1893) gives the results of his experiments, embracing one hundred and forty cases of different ocular affections, such as (1) parenchymatous keratitis, hypopyon-keratitis, and simple keratitis; (2) different forms of iritis; (3) affections of the vitreous body and different forms of choroiditis, of neuro-retinitis, and of atrophy of the optic nerve. He comes to the following conclusions:

1. Injections of sublimate merit serious attention as an excellent adjuvant in treating serious lesions of the media of the eye.

2. They should be considered as the best local treatment for lesions of the inner tissues of the eye, choroid and retina.

3. In sympathetic affections these injections deserve particular attention, since their use may prevent the enucleation of the eye.

4. The good results of solutions of sublimate under these circumstances may be due to the rapid absorption of the microbicidal solution, and, on the other hand, to a counter-irritant action, which in some way accelerates the dissemination of the products in diseased tissues. The author's method of using the injections is about the same as that employed by Darier and others. Methods and formulas are given in preceding numbers of the GAZETTE.

#### INJECTIONS AFTER THE MANNER OF BROWN-SÉQUARD IN OCULAR THERAPEUTICS.

The following extract from a report on the above subject is contained in the *Recueil d'Ophthalmologie*, December, 1893:

Darier, like De Wecker, has been in the habit of using injections of testicular essence for different ocular affections. He has not published his results heretofore on account of the inadequacy of the treatment. In tobacco, alcohol, and diabetic amblyopia he has never observed improvement. In tabetic atrophy of the optic nerve, Séquardian injections have sometimes produced improvement, just as this follows all other known methods of treatment,—for example, electricity, strychnine, stretching of the optic nerve, suspension, and antipyrin. All that he is willing to say is that the Séquardian injection is an excellent tonic, all the more efficacious when given to a reduced, debilitated, and neurasthenic organism, and the more confiding the patient is the more power it has. Mercurial treatment is a two-edged sword which yields, side by side with rare improvements, frequent aggravations, even in cases which are evidently syphilitic. It is, therefore, useful to have this additional remedy in the therapeutic arsenal.

De Wecker stated that the principal object of his communication was to demonstrate the inefficiency of Séquardian injections, so far as the ocular indications of ataxia are concerned. None the less, he recommends these injections because thereby the strength of the patient is increased, he is toned up, as it were, and there is an evident mental impression. He believes that it is easier to joke about them than it is to refute the indisputable effect of these injections under certain circumstances, especially in neurasthenic individuals, and details one case of marked retinal asthenopia in a patient of thirty-seven years of age, which was not amenable to ordinary treatment and yet was promptly relieved under the influence of these injections. Therefore, although he does not believe that

they have the slightest influence in relieving organic conditions like ataxia, he adds them to other treatment because of their undeniable tonic properties.

#### CONCERNING CATARACT EXTRACTIONS AND SUBSEQUENT DRESSING.

DR. JULIAN J. CHISOLM (*Annals of Ophthalmology and Otology*, January, 1894) sterilizes his instruments with boiling water, and, although he irrigates the conjunctival cul-de-sac with sublimated water, he doubts much whether this washing subserves any good purpose. He does simple extraction and is satisfied with it, although he has about eight per cent. of prolapse of the iris, which, however, has never caused any serious trouble if promptly dealt with. He evidently thinks, as many other surgeons do, that the operation which affords the greatest safety to the patient is a preliminary iridectomy. Operating by the simple method, he has abandoned the adhesive-strap dressing, which he formerly used, on account of the necessity of daily inspection of the operated eye, and adopts in its place a single Liebreich bandage. It is a quadrangular piece of folded muslin three inches long by two inches wide, with long tapes extending from each corner for securing it to the head. Over the closed eye is placed first a square of felted absorbent cotton, known as the cottonoid surgical dressing. This is usually wetted with a weak sublimate solution. A thin wad of cotton-wool is placed over this, and the whole secured by the single eye bandage lightly tied on the opposite temple, so as to exercise no pressure upon the eyeball. He does not consider it necessary to specially sterilize this dressing. If the wound has healed sufficiently on the third day, atropine is dropped into the eye, and on the fifth day the bandage is removed permanently. By the fourteenth day the patient can usually leave the hospital. He allows his patients considerable liberty of movement. In operating for congenital cataracts, no dressing is applied to the eye to close it up, but the patient's hands are secured lest he rub the operated eye.

#### THE TREATMENT OF INTERNAL SQUINT.

DR. HOWARD F. HANSELL (*Annals of Ophthalmology and Otology*, January, 1894) considers that the treatment of complicated internal squint includes the considerations which follow:

1. Improvement of vision.



(a) A careful and full correction of all optical defects.

(b) *Amblyopia*.—It is reported that in very early childhood amblyopia can be cured by training the amblyopic eye, by excluding the fixing eye from participation in the act of vision for days and weeks at a time by means of bandages or atropine. This method is conservative and doubtless efficacious in a few cases, and invalidates the excuse for early operation, frequently given, that the vision of the squinting eye will still further deteriorate.

(c) *The Proper Age for Operation*.—As is well known, a want of co-ordination of the eye-muscles in infants is common. A child may be several years old before it learns to bring both eyes into harness. This is a second and forcible objection to early interference. The rule usually followed is to wait until the child is old enough to wear glasses. He contends that this is too early. The patient should be sufficiently intelligent to discern double images with the tests employed and to give accurate information of their relative positions.

(d) *Hyperesophoria*.—Probably seventy-five per cent. of all cases of internal squint are complicated by an upward deviation of one cornea. It therefore is essential to successful treatment that vertical as well as horizontal equilibrium be secured. Indeed, it is not improbable that in a few cases of oblique turning of the cornea, esotropia depends upon hypertropia. This statement is corroborated, clinically, by a case reported by him in the *New York Medical Record*, August 26, 1893. Girl, aged five; hypermetropia 2.50 D., wide internal squint, fixes with R. Interni divided, under ether, August, 1891; apparent equilibrium one week later. In June, 1893, again internal squint and the same treatment. Two weeks later the squint is apparently as bad as before the first operation. He is now able to diagnose L. hypertropia three degrees; L. super-rectus divided; *the convergence becomes immediately divergence*.

He is convinced that his experience is not unique, and that convergent squint treated according to the usual and routine method is more often a failure than a success. The results amply prove that our conception of the physiology of hypermetropic squint is too limited, and that it should be extended to include the action of the elevators and depressors in conjunction with the interni.

2. *Equilibrium through Operation*.—The surgical treatment must be carried out under cocaine anæsthesia, since abolition of con-

sciousness is incompatible with scientific accuracy.

(a) Restoration of vertical equilibrium by tenotomy of the superior rectus of the upward and, if necessary, the inferior of the downward deviating eye.

(b) Restoration of horizontal equilibrium by tenotomy of both internal muscles and, if necessary, advancement of one or both externi.

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*THE EMPLOYMENT OF AN OIL OF BINIODIDE OF MERCURY AS AN ANTI-SEPTIC IN CERTAIN AFFECTIONS OF THE EYE.*

J. BRAQUEHAVE (*Archives d'Ophthalmologie*, November, 1893) describes his experiences with an oil of the biniodide of mercury. Various maladies have been treated,—namely, squamous and ulcerated blepharitis, styes, ulcers of the cornea, and granulations. Braquehave comes to the following conclusions:

1. The treatment with the oil of biniodide of mercury—4 parts to 1000—is an excellent application for all microbic inflammations of the ciliary border, provided the area affected is first thoroughly cured.

2. This medicament may be used in ulcers of the cornea resulting from neglected traumatism, even when accompanied by hypopyon.

3. It should not be used when ulceration of the cornea is the result of an inflamed condition of the eye, as, for instance, in phlyctenular conjunctivitis.

4. It may also be tried in granular lids.

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*A NEW METHOD OF PERFORMING JEJUNOSTOMY.*

ALBERT (*Wiener Medizinische Wochenschrift*, No. 2, 1894) reports two cases of jejunostomy performed by a method which represents a modification of that last introduced by Maydel. Maydel's operation consists in drawing out the first loop of jejunum which can be reached, cutting it across, exposing several inches of the distal end, and making a lateral implantation of the proximal end into a longitudinal slit made some distance below the seat of transverse section. The distal end is then secured in the abdominal wound; thus not only can nourishment be introduced into the jejunum, but also by means of the lateral implantation the secretions of the pancreas and liver are carried on to the ileum at the same time, and regurgitation of the bowel contents through the abdominal opening is rendered difficult. Albert's modification consists in

drawing out the first loop of the jejunum which is found, then closing by provisional suture the greater portion of the abdominal wound. The two arms of the loop thus drawn out are united at their bases by lateral anastomosis. Parallel to the first abdominal incision and one and a half inches above it an inch incision is made through the skin. From this superficial upper wound to the lower one a subcutaneous communication is established by tearing up the skin and subcutaneous fascia with the finger. Through the tunnel thus formed is drawn the convexity of the loop of jejunum, at the base of which the lateral anastomosis has been formed. The bowel is stitched in this upper skin incision, and the lower opening through which the gut passes from the abdominal cavity is closed as nearly as is possible without causing strangulation of the loop of jejunum passing through it. The skin-wound of the lower incision is entirely closed. The seat of anastomosis between the upper and lower arm of the loop lies within the peritoneal cavity, and when the apex of this loop is opened, there is provided a long sinus tightly pressed by the skin and which entirely prevents regurgitation of food. The anastomosis of course allows the normal passage of bile and pancreatic fluid.

Albert operated on two cases, one of which survived several weeks.

#### THE INCH-AND-A-HALF INCISION AND WEEK-AND-A-HALF CONFINEMENT IN APPENDICITIS.

At a meeting of the New York State Medical Society, held February 8, 1894, DR. ROBERT T. MORRIS, in a paper written under this title, stated that we had recently learned four principal things relative to appendicitis, and he was now asking the members of the profession to accept a fifth point.

1. We had learned that appendicitis was of such common occurrence that every general practitioner had many cases in his *clientèle*.

2. It was now generally known that multitudinous forms of abdominal inflammation were symptomatic of appendicitis.

3. Statistics showed that late operation did not give us much encouragement.

4. It was known that early operation or operation in the interval between attacks was attended with trifling mortality (with none at all, in his experience), but that there was danger of ventral hernia resulting from it if a long incision were made.

The fifth point was this: We do not need to

make a long incision in appendicitis cases that are operated upon at the outset of the inflammation, or in interval cases, as a rule; and there will be no hernias and no permanent scars if the surgeon will accept as standard the author's abdominal incision, which is one inch and a half in length, the divided structures of the abdominal wall being united separately with fine catgut afterwards. The author buries the stump of the appendix with Lembert sutures. His abdominal scar disappears entirely, so that at the end of a few months it cannot be seen. His death-rate has been nothing at all in cases without pus, and physicians upon whom he depended for cases were now ashamed to have him find pus in the cases to which they called him. He did not know just where to look for danger in any of the cases operated upon at the time of his choice, but called the attention of members of the Society to one danger in the use of carbonate of sodium for reversing peristalsis of the bowel. A note was at present going the rounds of the press to the effect that carbonate of sodium was useful in reversing peristalsis, but the author, in experimenting with rabbits, accidentally discovered that carbonate of sodium, on touching the ileum, regularly produced intussusception in less than forty-five seconds. The mechanism of the intussusception consisted in spasm of a belt of circular muscular fibres of the ileum, and this portion was then quickly invaginated by the peristaltic action of the longitudinal muscular fibres. The author now uses chloride of sodium for reversing peristalsis in all of his operations.

He stated that there was strong opposition to his plan of removing an infected appendix just as soon as it was discovered; but this opposition must fade away as soon as physicians generally could benefit from his experience, which was to the effect that appendicitis was an infectious, exudative inflammation, which did not disappear on disappearance of the symptoms. He had removed a large number of appendices from patients who felt perfectly well, but who could not obtain life insurance, or who feared recurrence, having had a previous attack of appendicitis. In all of these cases he found destructive processes in progress. Sometimes there was slowly-progressing necrosis of the lymphoid tissue of the appendix; sometimes he had found tuberculosis or carcinoma insidiously beginning at the seat of the old inflammation; sometimes adventitious bands set snares for bowel, and he had discovered that proliferating endarteritis, which must eventually lead to gangrene of the appendix, was common in very mild chronic cases. He had

found proliferating endarteritis producing slow occlusion of the arteries of the appendix in three mild chronic cases in succession.

The author stated that surgeons were laughed at occasionally because they found normal appendices at operation for supposed appendicitis; but he did not believe that proper examination was made of the specimens. He had removed two or three appendices which were apparently perfectly normal, but the patients' symptoms all stopped after the operation; and when cultures of bacteria and microscopic sections had been made from these specimens, it was found that they had been dangerously infected. The mucosa and adenoid tissue were undergoing destruction by the colon bacillus.

The author stated that when his inch-and-a-half abdominal incision was employed in removal of infected appendices, patients left the hospital at the end of a week and a half. If an incision two inches long were made, the patient would not be ready to leave until fourteen days after the operation; and if the incision were from two and one-half to four inches long, eighteen days would be required for repair. Consequently he had adopted as standard the inch-and-a-half incision and week-and-a-half confinement plan, which left no hernia and an evanescent scar.

By operating immediately in acute cases, he did not mean on the following day, but on the following hour.

Physicians who do not accept this plan must lose a few cases that they do not expect to lose, and they must let very many patients suffer tediously and unnecessarily; but there will not be much further opposition, because physicians are only too glad to do the very best thing as soon as they have learned what it is.

The insurance companies would not insure a patient who had ever had appendicitis, and whose appendix still remained, if they were to note the character of the adventitious peritoneal bands which form in these cases, and if they observed the persistence of appendicitis and of supplementary diseases in the appendices of patients who were thought to be quite well.

#### A NEW OPERATION FOR THE TREATMENT OF CHRONIC EMPYEMA.

DELORME (*Revue de Thérapeutique Médico-Chirurgicale*, 61 année, No. 3) proposes a new operation for the treatment of chronic empyema, having for its end the freeing the lung from its adhesions and its investment of false membrane, and the placing of it in such a

condition that it may again become a useful organ.

He first makes a large opening in the chest wall by the formation of a thoracic flap, then ablates the false membrane which covers the lung and ties it in the vertebral gutter, and finally replaces the thoracic flap.

He reports a case in point. The patient, aged twenty-four years, suffered in May of last year with left pleurisy. In August of the same year he was operated on for empyema, over a pint of pus being evacuated. There remained a fistula, which discharged freely, the patient suffering from hectic. Sounding through an opening showed that there was a large cavity extending to the top of the chest and about six inches in depth. A flap was marked out from the third to the sixth rib inclusive, with its base above and to the rear. The shape of the flap resembled the three sides of a rectangle, the upper and lower lines running parallel to the ribs, the base corresponding with the anterior border of the scapula, the anterior limiting line running parallel with the sternum three fingers' breadth to the left of its border. The incision was made in these lines, and the ribs were divided in front, the intercostal arteries being picked up with hæmostats. Posteriorly, the ribs were half cut through, then broken, thus turning back the entire flap with the soft parts attached to the ribs. The parietal pleura was covered with a pseudo-membrane two-fifths of an inch in thickness, with a granular, fungous surface. The latter was removed by curetting and vigorous friction with compresses. Even then it was impossible to locate the position of the lung, the pericardium, and the heart. The stripping off of the thick investing membrane was begun from the lateral chest wall far back. As the lung was freed it readily expanded, and indeed this expansion was so great that it projected from the thoracic cavity. When the surface of the lung and the costal pleura were entirely free from false membrane, the flap was replaced by suture, no ligatures being applied to the intercostal arteries. The operation lasted one and a half hours.

The author particularly remarked the absence of congestion and of circulatory or respiratory troubles, which might have been expected from the sudden release of an entire lung from its fixed position; the immediate beneficial influence upon the cyanosis from which the patient had suffered; the absence of any notable symptoms dependent upon the very considerable pressure which was exerted upon the lung during the process of freeing it from its adhesions; the facility with which the

layers of false membrane were dissected; the normal appearance of the lung; and the absence of notable hemorrhage.

Delorme concludes with the statements that it is possible to entirely free a lung from false membrane which surrounds it, even though the operation is undertaken long after the beginning of the empyema, and that this method is applicable not only to the right, but also to the left, side, and that it is without danger, provided the liberation is begun as far back as possible. He holds that the method is more rational and more conservative than that of osteoplastic resection alone, since in case it succeeds it obliterates the cavity by means of the functional lung.

#### ACUTE INTESTINAL OBSTRUCTION; ANASTOMOSIS WITH MURPHY'S BUTTON.

CORDIER (*Journal of the American Medical Association*, vol. xxii., No. 6) reports the case of a man aged twenty-two, giving a history of previous peritonitis, who was suddenly seized with the symptoms of acute intestinal obstruction. Eleven days later there were symptoms of intestinal perforation. The temperature dropped to 96.5° F., the pulse went up to 140. Intestinal gas and fecal matter escaped as soon as the belly was opened. A hard, vascular band was found running from near the right internal inguinal opening, attached to the abdominal parietes, passing upward and inward towards the umbilicus, crossing a coil of the ileum and attaching itself to a coil of the small bowel higher up. It was at this point that perforation was found, due to the tension of the band. The rent in the bowel was sutured, the portion of gut which was strangulated in the band was released, and lateral anastomosis was done around the seat of constriction by means of a Murphy button. The peritoneum was thoroughly irrigated with hot sterilized water and was drained. The operation required thirty minutes. The patient recovered, abdominal distention being relieved by a large enema, to which was added two or three drachms of turpentine and half an ounce of glycerin. Four weeks after operation the button had not been passed.

#### THE TREATMENT OF WARTS.

KAPOSI (*Revue de Thérapeutique Médico-Chirurgicale*, 61 année, No. 3) summarizes the treatment of warts as follows: Discrete out-growths should be removed with a sharp spoon,

hemorrhage being arrested either by pressure or by cauterization of the bleeding surface. When the warts are very numerous, their removal by fuming nitric acid or tincture of thuya is to be preferred. Condylomata should be sprinkled with resorcin or salicylic acid, or should have applied to them plasters containing ten to twenty per cent. of these substances. An excellent application is as follows:

R Flowers of sulphur, 20 parts;  
Glycerin, 50 parts;  
Pure acetic acid, 10 parts. M.

This is painted on daily for several days. Under its application the growth dries up and drops off.

Keratoses of the palms or feet is treated by plasters of resorcin or salicylic acid.

#### THE INFLUENCE OF DIABETES ON SURGICAL INTERVENTION.

REYNIER (*Revue de Thérapeutique Médico-Chirurgicale*, 61 année, No. 3) calls attention to the different reactive powers shown by the tissues of diabetics to traumatism, infection, or surgical intervention. In some cases operation is as safe as in the ordinary healthy being, in others the least surgical interference results fatally. Diabetes associated with extensive atheroma is, according to the author, the safest form of the disease for the surgeon. The nervous or pancreatic form of diabetes is the most dangerous form. Also, as diabetes progresses tissue resistance is lessened, hence intervention is safer in the early period of the disease than when it is well developed. Only absolutely necessary intervention should be practised when the disease has reached such a stage that the reflexes are abolished. Any form of irritation may precipitate sphacelus, which is practically always threatening. Carbolic acid and all dressings which are in the least irritating are contraindicated.

When gangrene has developed without inflammation, absorbing powders, such as salicylate of bismuth and iodoform, are useful.

There are two classes of surgical affections which may be subject to operation in diabetics who still preserve their reflexes. These are neoplasms and spontaneous infectious lesions. The removal of neoplasms should be avoided unless it is absolutely necessary. Most rigorous asepsis is required, as the slightest germ infection will certainly be followed by disastrous results. Antisepsis is contraindicated because of the irritative qualities of the drugs employed. Even should the reflexes be preserved,

operation should not be undertaken if the amount of sugar is more than fifteen or twenty grammes daily. Preceding operation a rigorous course of general treatment should be instituted.

In spontaneously infected cases three indications should be met: to avoid irritation, to limit infection, and to provide for free drainage, since there is practically not sufficient reactive power for absorption. This implies prompt incision of suppurating foci; the thermo-cautery or galvano-cautery may be employed, since thus opening of the vessels is avoided and hence the danger of propagation of infection is lessened. Generally the less the wound is interfered with the better for the patient.

Of forty diabetics operated on by the reporter, fifteen died from gangrene or allied conditions. Of these fifteen cases, two only preserved their reflexes at the time of operation. Of the remaining twenty-five cases, three died and twenty-two recovered.

#### TREATMENT OF ULCERS OF THE LEG.

FRANK (*Journal of the American Medical Association*, vol. xxii., No. 6) treats ambulant patients suffering from chronic ulcer of the leg according to Unna's method, as follows: The granulations are first thoroughly cleansed, then treated, according to indications, either with nitrate of silver if there should be hypertrophic granulation, or iodoform if the surface is putrid, torpid, and lacking in vitality. The leg is then washed and shaved, and a moderately thick layer of warm gelatin is applied up to the limits of the ulcer by means of an ordinary brush. This gelatin is thus prepared:

R Oxide of zinc, 30 parts;  
White gelatin, 40 parts;  
Glycerin, 50 parts;  
Water, 90 parts.

A small patch of gauze is added as a covering to the sore, and a gauze roller, beginning at the toes, is wound firmly around the limb. When a firmer dressing is required,—that is, when it is necessary for it to remain for a long time,—the layer of gauze is covered with another layer of gelatin, and the bandage is continued over this from above downward. The gelatin is then allowed to cool and become dry, whereupon the patient can be dismissed without further precautions. When the discharge is abundant, this dressing must be repeated at intervals of three days. As discharge

diminishes, the dressing may be allowed to remain on eight days or longer. It is perfectly protective, exerts even compression on the leg because of the elasticity of the gelatin, and prevents the discharge from coming in contact with healthy skin.

The author highly lauds resorcin as an agent potent to produce new epithelial formation. It is applied, as soon as healthy granulations make their appearance, in the form of a ten-per-cent. plaster. When the ulcer is unusually callous this dressing will not be efficient, the ordinary adhesive plaster straps and flannel bandage then being indicated. Diachylon plaster is preferred to the ordinary adhesive plaster, and oleum fagi is painted over the thickened surroundings of the granulations.

#### HEMORRHAGIC EMISSIONS.

LYDSTON (*Journal of Cutaneous and Genito-Urinary Diseases*, vol. xii., No. 137) reports five cases of hemorrhagic emissions. In two of them the blood was probably derived from an acutely congested and inflamed mucous membrane lying just behind a stricture. Orgasm, by adding to this congestion, caused rupture of smaller vessels. The third case was an instance of prolonged excitement producing such engorgement of the sexual apparatus that, even though there was no evidence of disease, bleeding occurred during orgasm. In this instance directions as to sexual hygiene, administration of ergot and bromides, and occasional introduction of a cold steel sound brought about a cure. The last two cases were representative cases of vesiculitis and posterior urethritis. These were treated by careful attention to hygiene, irrigation of the rectum with hot water, internal administration of ergot and the bromides, and mild astringent lotions applied to the posterior urethra by means of a short urethral nozzle.

#### THE ABSORPTION AND ELIMINATION OF MERCURY WHEN ADMINISTERED BY INUNCTIONS.

WELANDER (*Revue de Thérapeutique Médico-Chirurgicale*, 61 année, No. 3), basing his conclusions upon the fundamental belief that the quantity of mercury eliminated by the urine bears a certain proportion to that taken into the system, holds that the absorption of mercury is influenced not at all by the excipient used in forming the ointment, though personally he prefers lanolin. Ointments which are rubbed in most rapidly are those containing 1

part of mercury and 2 parts of fat. The method of rubbing, whether by the naked hand, the gloved hand, or the glass rod, does not materially influence the amount of drug absorbed, nor do baths exert any direct influence, acting simply in cleansing the skin, thus augmenting its absorbing power. It is immaterial whether the ointment be rubbed in immediately after the bath or several hours afterwards. The amount of mercury absorbed after simple smearing on of the ointment is greater than that absorbed as the result of friction alone.

Welanders holds that when inunctions are used a large amount of ointment should be employed, so that a part can be absorbed during the rubbing and the remainder can be left on the skin under a bandage. He recommends that, in place of rubbing, ointment should be simply smeared on the surface in the evening; after this the patient should be kept in bed for from ten to fourteen hours in a warm room.

#### TREATMENT OF CHANCRE WITH PEROXIDE OF HYDROGEN.

WORSTER (*Journal of Cutaneous and Genito-Urinary Diseases*, vol. xii., No. 137) calls attention to the rapidity with which chancres heal under somewhat prolonged spraying with peroxide of hydrogen, full strength, the vapor of which is projected against the lesion with a cylinder pressure of sixty pounds. Three cases are reported which seemed to corroborate the author's claim for this method. It is one which has long since been recognized as the most efficient means of applying antiseptic solutions, and indeed simple sprays of water alone exert a surprising resolvent effect upon both acute and chronic phlegmons, some of the French observers having claimed for this method, when carbolic-acid solutions are used, absolutely abortive effects in the treatment of carbuncles or boils.

#### TREATMENT OF OLD LUXATIONS OF THE SHOULDER.

THIERY (*La Tribune Médicale*, 27 année, 2e sér., No. 4) presented a patient forty-eight years of age, suffering from luxation of the shoulder for three months. The luxation was of the subcoracoid variety. In case of the shoulder, Thiery holds that the case must be considered old after the lapse of a month. As to the question of irreducibility, Nélaton's teaching is followed, that the common cause of this is a button-hole tear in the capsule without detachment of the latter from its points of

bony insertion; hence the posterior portion of the capsule lies across the glenoid cavity, practically filling this shallow depression. As the luxation persists, the glenoid cavity becomes less marked. Also it is quite possible for the head of the humerus to pass through a button-hole opening of the coraco-brachialis, or it may pass quite under this muscle. In one case seen by the author the head of the bone had perforated the pectoral muscle and become subcutaneous. Reduction by ordinary means was quite impossible, and before the bone could be replaced open incision was required, although the injury was only of eight days' standing. In this instance the pectoral muscle offered no obstacle to reduction, the coraco-brachialis being the muscle at fault.

Adhesions quickly take place between the capsule and joint surface after luxation, thus rendering return by manipulation progressively more difficult. Moreover, the head of the bone contracts adhesions in its new position as a part of nature's process in forming an artificial joint. The author advises always, in case of old luxations, to first try the proceeding of Kocher before having recourse to other methods. This can be attempted without anæsthesia. In the event of failure, ether is administered, and counter-extension and coaptation attempted. In case of failure in efforts not persisted in for an undue length of time, the question of operation will depend upon the amount of motion which the surgeon is able to procure by his manipulation. If this is sufficient to qualify the patient for his work, and if, moreover, there has been no complaint of great and disabling pain, it is well to advise against open operation.

In the case presented, as the movements were sufficient and as the patient was not seriously incommoded, surgical intervention was rejected.

In discussing what should be done in operative cases, subcutaneous division of fibrinous bands was absolutely rejected, as was manual osteoclasis, with the idea of forming an artificial joint. The method of operation in these cases should be opening the articulation by a free incision, preparing the glenoid cavity, freeing the head of the bone and placing it in its normal position. If, when this operation is attempted, the head of the bone is so firmly fixed in its abnormal position that it is impossible to mobilize it, resection of the humerus is indicated, saving, however, as much of the shaft as possible.\*

\* Kocher's method consists in placing the elbow at right angle and pressing it close against the side. The

*SUPRAPUBIC CYSTOTOMY COMPLICATED  
BY ADHESION OF THE PERITO-  
NEUM TO THE SYMPHYSIS.*

ROLLET (*Lyon Médical*, No. 3, 1894), after an historical review of the operation of suprapubic cystotomy, reports a case which was complicated by a peculiar anatomical arrangement of the parts. Tillaux and others hold that this operation is free from danger of wounding the peritoneum, since this membrane is lifted out of reach by the distended bladder, though Féré calls attention to the fact that post-mortem examination of a certain number of old men suffering from double inguinal hernia showed the peritoneal cul-de-sac in front of the bladder resting in contact with the pubis. Petersen also states that there are two cases on record in which the peritoneum was adherent to the pubis, and Pitha records a similar case. Polaillon, in performing suprapubic cystotomy for the removal of a large calculus, found that, in spite of previous distention of the bladder, the peritoneum was in the line of his incision. Subsequent post-mortem examination showed that in this case, too, the vesico-abdominal cul-de-sac of the peritoneum descended as far as the pubis.

The case reported is of a man sixty-nine years old, suffering from retention. No instrument could be passed through the urethra; the bladder was distended until it almost reached the level of the umbilicus. Puncture was made above the pubis with a trocar, the canula being allowed to remain in place. About two quarts of urine were evacuated. Two days later, on account of fever and some signs of wound infection, suprapubic cystotomy was performed, including the trocar wound in the line of incision. After the superficial cut the finger was introduced along the grayish channel of the trocar wound, tearing a membrane, which was found to be peritoneum; the wound thus formed allowed a loop of gut to escape; hence the trocar had entered the peritoneal cavity before puncturing the bladder. The peritoneal adhesions to the symphysis were freed; the peritoneum was closed by silk. The bladder

humerus is then carried in outward rotation as far as possible by sweeping the forearm outward. When this motion is completed, the head of the humerus should roll outward below the acromion process. Unless this change of the position of the head is noted, the further steps of this process will be useless. While the humerus is still held in extreme external rotation, the elbow is carried forward and upward as far as it is possible to push it by the continued force exerted by the surgeon's hand. The arm is then rotated inward and the elbow carried to the side of the chest. All these motions should be done slowly and deliberately.

was then punctured, and the prostate was found to have two large lateral lobes. The walls of the bladder were sutured to the borders of the parietal wound. The patient died two weeks later from uræmia.

The author holds that this lesson should teach that in every case of cystotomy, even though the bladder be greatly distended, immediately after incision of the subperitoneal fascia there should be a careful search made with the finger for the peritoneal cul-de-sac, bearing in mind the possibility of its adherence to the symphysis. When these adhesions are present they are readily torn by the finger and the peritoneum is stripped up, exposing the anterior bladder wall.

Poncet has shown that suprapubic puncture for the relief of distention of the bladder is a dangerous procedure, since from it abscess may result or infection of the prevesical cellular tissue or urinary infiltration. This case proves that peritonitis can also be caused by this procedure, and had the canula been withdrawn after two or three days it is more than probable that a general septic peritonitis would have followed.

*EXTIRPATION OF THE SHOULDER, ES-  
PECIALLY IN REGARD TO ITS  
APPLICATION IN SARCOMA  
OF THE HUMERUS.*

NASSE (*Sammlung Klinische Vorträge*, No. 86, 1893) presented a patient with a completely healed wound fourteen days after the arm, the scapula, and part of the clavicle were removed because of sarcoma of the humerus. He states that this operation was first performed by Cuming in the beginning of the present century, and that in 1888, Adelman could collect only sixty-seven cases, including those instances in which the operation was done in two stages,—i.e., in one the arm is removed, and later on the scapula and clavicle are taken away.

The method employed consists in preliminary ligature of the third portion of the subclavian artery; corresponding to the point of ligaturing the clavicle is sawed through, the subclavian vein ligated after elevation of the arm, and the brachial plexus is divided. The ligation incision is carried in a curve over the outer portion of the clavicle, being dissected away from this bone. From the outer end of this incision the cut is carried downward to the axilla, then to the angle of the scapula. The pectoral muscles are divided and the scapula is freed from the thorax as far back as the serratus magnus. The latissimus dorsi is then cut

through and the angle of the scapula freed. But little hemorrhage follows this portion of the operation; still, all bleeding points are seized at once and the wound is covered with a gauze tampon. The shoulder is then drawn forward and the posterior cut is made, passing from the external extremity of the incision first made for the purpose of ligation of the subclavian directly backward and downward to the angle of the scapula, where it joins the first incision. The skin is dissected back, and the upper posterior borders of the scapula freed by free incision of the rhomboidei muscles. With the division of the serratus major, the separation of the arm and shoulder is completed. When this cut is made there is usually free bleeding from the branches of the transversalis coli and transversalis humeri. This is readily checked. The flaps are now trimmed up and the wound closed. The precaution should be taken in raising the flaps to include no muscle, though the flaps should be made as thick as possible. If the flaps are made too long and thin, gangrene may occur; hence any muscles which still preserve their blood-supply should be retained, provided they are not infected.

The point of this operation consists in the preliminary ligation of the subclavian artery and vein before beginning the formal operation. This, too, is the most difficult procedure. Von Bergmann has performed this operation in the last few years fourteen times; two of these cases had previously been subjected to amputation or exarticulation at the shoulder-joint. There was only one operative death among these cases. In this instance incision showed that the sarcomata had infiltrated the subclavian artery and vein and had reached the superior vena cava; hence, to avoid immediate fatal bleeding, ligature of the vena cava was required. The patient died very shortly, but in this case death could not be attributed to amputation of the shoulder. None of the other patients suffered from serious shock. Most were well in two or three weeks. Some had a discharge from the track of the drainage-tube for a longer time.

As far as the operative results are concerned, these are entirely satisfactory. When, however, this procedure is adopted for the radical cure of malignant tumor, the results are by no means so favorable. One form of sarcoma—namely, the medullary giant-cell growth—is comparatively non-malignant, and in certain cases even local exsection is followed by permanent cure. These growths spring from the medulla of the bone in the epiphyseal region and very seldom rise from the diaphyses. A

point of special importance is that they are encapsulated and grow slowly. Even when the capsule ruptures they are not prone to infiltrate. There are, however, certain malignant giant-cell sarcomas of the bone which are prone to give rise to metastasis. In the strictly encapsulated forms of sarcoma thorough removal by the knife, chisel, and curette is sufficient, the limb in this case being saved. Exceptionally there is recurrence *in loco*, but this is not the rule. Four patients are reported subjected to this local operation. In one three years passed since operation, in three over five years.

All the other forms of sarcoma exhibit decided malignancy; indeed, local removal is practically never sufficient to accomplish radical cure. Even though the limb be entirely removed, the prognosis is by no means bright. This is due to the rapid dissemination of the growth incident to the close connection of sarcoma with the blood-supply, the infection travelling particularly along the venous channels. In every patient where venous involvement had extended beyond the limits of the growth, so that it was macroscopically visible, metastasis occurred. To prevent metastasis, early diagnosis and radical operation are of course demanded. It is well known that as long as sarcoma is confined within the bone or the periosteum its growth is greatly limited, but as soon as it breaks through its capsule its increase in size is extremely rapid. The muscles are first infiltrated and then the intermuscular septa. This dissemination is rapid; hence the futility of attempting removal by a purely local operation. Even amputation often fails to prevent récidivity. Of forty amputations and exarticulations, recurrences occurred in five. Of fourteen cases of extirpation of the shoulder mentioned by Nasse, in twelve the operation was undertaken for the cure of sarcoma. One perished immediately following operation, on account of extensive disease of the vein; two perished of recurrence. In both these cases the arm had previously been amputated, and shoulder extirpation was undertaken for recurrence *in loco*. Two patients have been operated on within the last year. All these cases can be set aside in considering the question of recurrence. Of the remaining seven primary sarcomas of the humerus, four were suffering from involvement of the shoulder-muscle at the time of operation. There were two recurrences *in loco* in these cases and two deaths from metastasis. In three cases the shoulder-muscles were healthy; récidivity occurred in none of these. They were all large tumors. In one instance



the sarcoma had involved not only the bone and soft parts, but had extensively infiltrated the veins. This patient perished of metastasis. Of the two remaining cases, both exhibited muscular infiltration of the arm. In spite of this, both are living, one five and a third years from the operation, the other three and a third years following surgical interference. Nasse strongly urges this radical operation whenever the sarcoma of the humerus has ceased to be strictly encapsulated, and brings in support of his argument what he states are the much more favorable results of operation in mammary cancer when, in accordance with modern methods, not only all the tumor is removed, but the axilla is cleared out and part or whole of the pectoral muscle removed also. This radical operation he would not advise in cases of sarcoma of the forearm.

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*ENTERECTOMY; END-TO-END ANASTOMOSIS; CHOLECYSTENTEROSTOMY WITH MURPHY'S BUTTON.*

ROGERS (*Medical Record*, vol. xlv. No. 4) reports two cases of abdominal surgery. In the first the patient gave a history of inguinal hernia which was suddenly brought down by a jar. This was apparently reduced by taxis, though the patient still continued to complain of pain. There was slight induration at the site of the internal ring, but apparently within the abdominal cavity. For two days purgatives and enemata failed to act on the bowels; the abdomen gradually became distended and tympanitic. At the end of this period there was marked tenderness over the umbilicus, down to the inguinal canal on the right side, and faecal vomiting. No hernia could be felt in the inguinal canal, though just above Poupart's ligament, and just under the internal ring, there remained a small induration indistinctly felt on account of the distention of the abdomen. The conclusion was that the hernia had either been reduced in its sac, or else that both had been pressed up within the inguinal canal. An incision of three inches was made over the site of the appendix. At least a pint of blood-stained fluid escaped from the peritoneal cavity. Eight inches of intestine were drawn; the seat of constriction was at the internal ring. The constricted gut was brought through the abdominal wound to the outer surface of the abdomen. It was so congested that at each end of the eight inches, where the encircling band had constricted it, the peritoneum had given way and gangrene was imminent. Ten inches of gut were resected and

end-to-end approximation was accomplished by means of Murphy's button. The abdomen was drained and closed. Fifteen grains of calomel were given the night of operation, ten more were administered the next day, and by means of oft-repeated large enemata the intestinal canal was thoroughly emptied of all gas and faecal matter at the end of sixty hours. Convalescence was uninterrupted. Drainage was removed on the third day; the button was passed on the seventh day.

The second case was suffering from distended gall-bladder with enlargement of the liver. An incision was made two and a half inches below the anterior extremity of the ninth rib, extending backward three inches; the fundus of the gall-bladder was brought into the incision, was opened, and from it escaped fourteen ounces of bile. The patient was so shocked that operation was completed as rapidly as possible, the gall-bladder being sutured to the anterior wall of the abdomen. At the end of three weeks the swelling of the liver had subsided and the patient was in good general condition. Six weeks from the first operation the patient was again anaesthetized and another exploration was made for the obstruction of the common duct, two enlargements, apparently calculous, being found. The condition was not such as to justify efforts at removal of these stones, so that cholecystenterostomy was performed by means of the Murphy button. This button came away from the fistula in the abdomen on the seventh day, and there was much trouble in keeping food from escaping by way of the gall-bladder. Most of the bile passed into the bowel. The patient returned to his home at the end of four weeks, after which time he began to gain in weight. Three months after operation he was taken with diarrhoea which, soon becoming dysenteric, caused death on the third day.

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*VENTRAL HERNIA FOLLOWING LAPAROTOMY.*

MCARDLE (*Medical Press and Circular*, January 24, 1894) holds that there are many causes which interfere with prompt and thorough healing of a laparotomy wound. He places these in order of importance thus:

1. Failure to engage the different layers of this stratum sufficiently in the sutures.
2. Interposition of contused peritoneum.
3. Hæmatoma not becoming soundly organized.
4. Suppuration from inherent or extrinsic causes.

The remedy for this is to suture the abdomen in all laparotomies, as we do in all cavities in which blood or serum could collect, and to avoid contusing the peritoneum by using catch forceps, such as suggested, with sharp points.

The steps of the operation, as McArdle believes it should be conducted, are: Incision of the skin on one side; isolation of the neck of the sac along this side, then undermining not only the skin, but all the tissues on the other side of the neck, making it possible to cut cleanly through everything down to the neck of the sac with a strong scissors with long handles. This done, and being satisfied by opening the sac that no omentum or bowel remains in it, a Hagedorn's needle is carried round in the subperitoneal tissues, like a purse-string. This being drawn and tied, and numerous sutures carried with the same needle through the aponeurosis, close the wound over the mouth of the purse after cutting the ligature. Skin sutures passing deeply and taking up the floor of the wound are now applied and knotted, and the operation thus completed.

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*TREATMENT OF INFANTILE HERNIA  
OF THE INGUINAL TYPE IN  
THE MALE.*

MANLEY (*Journal of the American Medical Association*, vol. xxi., No. 25) holds that treatment of infantile hernia of the inguinal type, in the absence of complications, should be on tentative lines. It is only in exceptional and unusual cases that the question of operation will arise. This holds true of the class which is seen in the sucking infant before walking begins. The treatment should have reference to diet, clothing, rest, support or pressure, removal of such causes as cause straining, and radical operation. The clothing should not include the tight encircling band so commonly applied over the lower thorax and entire abdomen. This renders spontaneous cure of the hernia impossible. Rest is one of the most potent agencies in accomplishing cure in every species of hernia and in every stage of life. The herniated infant should be kept in a lying and sitting position as long as possible. A small, painless hernia which shows no tendency to enlarge, will do better by entire non-interference than by the misdirected application of pressure. In the simple cases, a simple bandage support will probably do no harm. Before applying this, the descent of the testis

must be assured and the possibility of the hernia being a simple cyst must be excluded. For support, the hank truss, made of a couple of skeins of worsted, or the simple pad and spica bandage, amply suffice. The general use of the spring truss in infantile hernia is a bad practice. Its adoption is to be prohibited except in those cases in which the medical attendant is permitted to keep the case under constant observation. Trusses with a strong spring do incalculable harm. By their pressure they often not only prevent the testis from fully descending, but they likewise induce adhesions of it with other parts. Simple reducible hernia they render irreducible in many cases; and in many, too, by their constant pressure, they induce atrophy over the rings which they are supposed to strengthen. When the child takes to his feet, the truss plays an important rôle. The infantile hernias which require operation are, (1) those in which there is a marked tendency to increase in volume, (2) those which are attended with severe pain, and (3) those in which there are extensive adhesions between the testis and viscera, and there are no possible prospects of reduction or cure without radical methods. The technique of operation is practically the same for the young and the adult. Some sort of support should be worn for a year after operation.

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*A SPECIAL METHOD OF APPLYING THE  
THERMO-CAUTERY IN THE TREAT-  
MENT OF CERTAIN CASES OF  
LUPUS VULGARIS.*

For years past reports as to the efficacy of the thermo-cautery in the treatment of lupus have occasionally found their way into print, but no details have been given as to how or when this valuable instrument should be employed.

STOPFORD (*Liverpool Medico-Chirurgical Journal*, No. 26, 1894) reports in detail two interesting cases treated by the thermo-cautery with markedly beneficial results. The first case was that of a woman, aged twenty-eight, who had lupus of six years' standing, which originated in a wound in the lobule of the right ear. The disease involved the right ear, the whole of the right cheek, extending to within an inch of the outer canthus and the nasal and oral orifices, the integument over the mastoid process and the scalp for an inch above it, while inferiorly it swept under the jaw from a point three inches below the situation of the lobule of

the ear to the larynx. The helix and lobule were completely destroyed. Previous to coming under the writer's care she had undergone scraping and the use of the solid stick of caustic potash, without arresting the disease. By her own desire she was inoculated with Koch's tuberculin during August and September, 1891, which treatment had no perceptible effect beyond causing a little desquamation. Considerable melting down and subsequent improvement took place in the scar tissue, but the tuberculin had the effect, without doubt, of causing a rapid increase in the patch; the spreading of the margin and development of nodules at the periphery next the median line of the face was most noticeable.

In October the patient came into the hospital to undergo treatment with the cautery, with a sore on her head caused, as she stated, by an iron pan weighing eight pounds falling upon her during the time she was at home undergoing inoculations. Examination revealed a lupoid patch situated to the left of the anterior fontanelle, measuring one and a half inches by one inch in diameter. This was freely excised down to the periosteum of the skull, and the margins of the wound lightly touched with the thermo-cautery knife. The original disease on the face was firmly rubbed with a piece of lint soaked in a solution of liq. potass., 1 to 3, in order to remove any adherent crusts or scales and expose the superficial extent of the disease. The whole involved surface was very carefully gone over with a spoon, and when bleeding had almost ceased a succession of punctures, each a quarter of an inch deep, were made with the needle-cautery. These were so close as to form a continuous line around the edge of the advancing margin; and lest this should prove ineffectual in arresting the disease, a second series of punctures in the healthy skin, in like manner, were made outside the first, at a distance of a third of an inch; then with the button-cautery at nearly white heat the whole was firmly and slowly stroked again and again until a hard, brown, leathery-looking eschar resulted. A carbolized oil dressing was applied twice daily until the sloughs separated, and in four or five days a clean and healthy but freely-suppurating wound remained. After this radical treatment many lupoid nodules still remained, but gradually disappeared under the influence of a weak mercurial paste rubbed in twice daily.

The second case was that of a child, aged thirteen. The disease occupied the whole left cheek, covering much the same extent as in

the first case. Owing to the extreme vascularity and thickness of the lupus, Stopford determined to treat the disease as a *nævus*, by multiple puncturings an eighth of an inch deep with the cautery-needle. These were continued until the whole patch assumed a reddish-gray appearance. The margin also was surrounded by a cordon of punctures. Free sloughing resulted. When the surface healed the lupus was subjected to multiple linear scarification on two separate occasions. Following this treatment, all the lupus, except a few nodules, disappeared without further applications, and the cicatrix became perfectly white and presented no hypertrophy. It is interesting to note that no nodules developed outside the ring of punctures, though a few appeared on the forehead at a little distance from the excised patch in the first case.

During the past two years the writer has operated on twenty-odd cases with the thermo-cautery. Some have been treated with the button, others with the knife, and others, again, with the cautery-needle; some, again, with a combination of all three. He divides the modes of treating these troublesome cases into two classes: the first, aiming at removal and destruction of the morbid process by scraping, and subsequent cauterization by chemical agents; the second, by the thermo-cautery alone or in conjunction with other measures. It not only destroys the disease, but causes any remaining morbid tissue to disappear by toning up and reducing vascularity of the part diseased.

His routine method, with slight modifications, as warranted by experience in individual cases, is to wash the diseased area with a solution of potash, varying the strength according to the thickness of the horny layer; then it is thoroughly and carefully scraped. Should much hemorrhage occur, the use of the cautery is postponed until next day. The choice of the cautery-button or needle depends upon the depth and vascularity of the disease. The needle puncture is best to isolate the lupus patch from its surroundings. He uses the button cautery as hot as possible, so that it chars the superficial tissues immediately it comes in contact, preventing too great destruction of subjacent tissues, while permitting sufficient heat to pass through to partly obliterate the papillary plexus. When the slough separates and the wound is healed, the cicatrix is a pale pink color, ultimately becoming quite white. Should nodules appear in the scar, they are immediately bored out. It is obvious that surface cauterization will fail in all cases of lupus in-

filtrating subcutaneous tissue; for these the multiple puncture with the cautery-needle enables piercing of the deeper horizontal vessels, thus sealing the channel by which the infective process is nourished and its products carried to the adjacent parts.

*CEREBRAL TUMOR DIAGNOSED BY  
FOCAL SYMPTOMS, WITH OPERA-  
TION AND SUCCESSFUL  
REMOVAL.*

STEELE (*Journal of the American Medical Association*, vol. xxii., No. 4) reports the case of a Swede, fifty-one years old, male, eldest of nine children, being the father of six children himself, a laborer, on whom he successfully operated for cerebral tumor.

The toilet of the operating field was thoroughly made the previous day, the head having been shaved and cleaned and a wet 1 to 2000 bichloride dressing having been applied, to be worn until time of operation.

After the patient was thoroughly under chloroform, a small, solid, cylindrical rubber band was passed around the head to render bloodless the field of operation in the scalp. Four stitches were introduced equidistant apart, binding the rubber constrictor to the scalp so as to prevent slipping. Owing to the extent of the symptoms, showing that the convolutions of the upper half on either side of the Rolandic fissure were involved, the nicety of delicate cerebral localization technique was dispensed with, and a horseshoe shaped flap of three inches width was turned down and fixed with one stitch to the integument beneath, to keep it out of the way of the operator. A large button of bone was then removed, and the opening enlarged by the rongeur to a size corresponding to nearly that of the scalp flap, a little over three inches in diameter, and heart-shaped. Palpation through the meninges showed great resistance over the region corresponding to an inch each side over the upper third of the Rolandic fissure. Below this region the resistance was normal. On opening through the meninges, there was found absence of pulsation over the region corresponding to the part offering great resistance to palpation, and slight pulsation below that region.

Faradization with a double-brain electrode over the dense tissue was followed by no muscular response, but at the lower margin of this tissue and on down the Rolandic marginal convolutions there was responsive contraction

of arm muscles. Macroscopically, the dense tissue presented a yellowish color and bulged into the wound. On digital exploration, a tumor of considerable dimensions was found extending downward into the brain and readily separable from it, a few slight adhesions of the tumor capsule alone offering any barrier to removal. After outlining the free borders of the growth, a firm pedicle was found attached to the skull or falx cerebri at the region of the superior longitudinal sinus. The tumor was shelled out quite readily with the fingers, leaving the firmer portion, the pedicle, which was removed with a strong curette, after cutting away the skull with the rongeur forceps. A large rent in the superior longitudinal sinus was necessarily made on removing the pedicle, which necessitated firm packing of the whole intracranial wound. This readily controlled the hemorrhage, which was enormous for a few seconds; but it prevented the satisfactory closure of the wound with the return of the bone chips. The regular antiseptic dressing was applied, and was not disturbed for three days, when the bulk of the gauze dressing was removed, leaving only one small piece over the rent into the sinus. At the second dressing, four days later, the remaining piece of gauze was removed.

Slight constitutional disturbances followed the operation; temperature, 101° F.; operation fever for thirty-six hours, followed by a decline to normal on third day. There was complete motor paralysis of the arm and leg for twenty-four hours following the operation, at the end of which time slight motion returned to the leg, and nineteen days later some motion was observed in the arm. Slight but steady improvement has occurred since that time. The patient first noted sensation in the shoulder muscles, the next day he could move the arm, on the third day he could draw up the forearm, and now he has good control of the whole arm except the fingers, in which he has no power and but little sensation. He makes some new movement or exercises some muscle each day. He is now able to sit up and walks a little.

The packing prevented the accurate suturing of the scalp; there was an opening of perhaps two inches through which the ends of the strips of gauze were drawn out. At the end of a week these edges were freshened and resutured. There is at the time of above report a small opening half an inch through, in which a minute strip of gauze is kept for capillary drainage. Granulation tissue covers the wound. The tumor was an endothelial fibro-sarcoma.

*LOTION FOR CONJUNCTIVITIS.*

R Acidi borici, gr. xx;  
Sodii chloridi, gr. viii;  
Aq. destill., ℥ii.

Sig.—Use freely every four hours, first warming.

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## Reviews.

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THE NATIONAL DISPENSATORY, CONTAINING THE NATURAL HISTORY, CHEMISTRY, PHARMACY, ACTIONS, AND USES OF MEDICINE, INCLUDING THOSE RECOGNIZED IN THE PHARMACOPŒIAS OF THE UNITED STATES, GREAT BRITAIN, AND GERMANY, WITH NUMEROUS REFERENCES TO THE FRENCH CODEX. By Alfred Stillé, M.D., LL.D., John M. Maisch, Ph.D., Charles Caspari, Jr., Ph.G., Henry C. Maisch, Ph.G., Ph.D. Fifth edition, enlarged and revised in accordance with Seventh Decennial Revision of the United States Pharmacopœia. With three hundred and twenty illustrations.

Philadelphia: Lea Brothers & Co., 1894.

The appearance of the fifth edition of the National Dispensatory so soon after the recent revision of the United States Pharmacopœia will be welcomed by the great number of physicians and pharmacists who in previous years have been subscribers to this valuable encyclopædia of pharmacy and medicine.

The late Professor John M. Maisch could not have reared to himself a more lasting monument in evidence of his great learning and energy than this work, to which he, in connection with Dr. Stillé, contributed so much.

It is hardly necessary for the reviewer to mention the fact that the scope of the work is very broad, including the description, chemistry, process for manufacture or collection, test as to purity, symptoms and treatment of poisoning, uses and action, convenient methods of administration, incompatibilities, etc., of all substances used in medicines; in fact, the scope of such a work is unlimited as to the discussion of drugs and chemicals.

In carefully reviewing the work one is struck by two facts,—first, that the history and descriptions of drugs and chemicals is by far the most complete of any of its parts, and second, that the treatment of poisoning is its weakest point. As an instance of this last-mentioned fact is to be observed, that among the substances recommended in the treatment of carbolic-acid-poisoning is oil. The more recent teaching upon this subject is that oil increases

the absorption of carbolic acid, and is therefore not to be used in cases of poisoning from this substance. The yellow ferrocyanide of potassium is not mentioned in poisoning from sulphate of copper, nor permanagate of potassium in acute poisoning from phosphorus. This is considered an oversight, as these are generally taught to be the most reliable antidotes for these poisons. We are told that in opium-poisoning the *pupils* are to be taken as one of the guides as to the quantity of atropine to be administered, and *vice versa* in cases of belladonna-poisoning in which morphine is used as a physiological antidote. Inasmuch as it has been demonstrated that opium contracts the pupils by a centric action, and that belladonna dilates them by peripheral action, it is considered unsafe to be guided by the pupils when administering these antidotes.

The authors fail to give the treatment for poisonings as fully as a work of this kind should. This the reviewer considers a serious shortcoming, as a dispensatory is the only guide upon which druggists rely when called upon to treat such an emergency case, and it is a well-known fact that many cases of poisoning are first seen by them, and they should be supplied with the most specific directions for applying intelligent treatment while the physician is being summoned.

The official preparations are, of course, directed to be made according to the latest Pharmacopœia, and as a matter of convenience the apothecary weights and measures are given, as well as those of the metric system. In the appendix there is a valuable table of comparative weights and measures between those of the apothecary and metric system, and also a condensed list of the official substances and preparations made from them.

In the preface the authors call our special attention to the therapeutic index which is to be found in the appendix. The object of such an index is, of course, to furnish the prescriber with a ready list of drugs to be used in the treatment of certain diseases. The value of this index is somewhat lessened by the use of such indefinite terms as "Diseases of the Skin," under which are mentioned more than one hundred and fifty remedies without specifying in what disease of the skin the remedy is to be used. Similar headings are "Diseases of the Eye," "Diseases of the Ear," and "Nervous Diseases." Upon the whole, the reviewer does not consider the therapeutic index a strong feature of this otherwise very accurate and valuable work.

The book is recommended most highly as a book of reference for the physician and as invaluable to the druggist in his everyday work, and it is far from the reviewer's intention to detract from its great value in mentioning what he considers the above minor defects.

The index is accurate and complete and the type and paper of the first quality.

E. Q. T.

THE MODERN CLIMATIC TREATMENT OF INVALIDS WITH PULMONARY CONSUMPTION IN SOUTHERN CALIFORNIA. By P. C. Remondino, M.D.

Detroit: George S. Davis, 1893.

Dr. Remondino is noted for the wide scope of the subjects which he has treated with his pen, and he has presented us with a little book which will prove particularly valuable to those who find it necessary to seek the delightful climate of which he writes. He gives minute directions as to the conduct of their lives, and lets the subject of medicine itself alone. As he says in his preface, many of the facts that he states are reiterated for the purpose of impressing on the reader those points which are absolutely essential to the climatic treatment of phthisis. The book costs but twenty-five cents, and the physician may with confidence obtain it and distribute it among those patients whom he has directed to seek relief in a milder climate than can be found in most portions of the United States.

A CLINICAL TEXT-BOOK OF MEDICAL DIAGNOSIS FOR PHYSICIANS AND STUDENTS, BASED ON THE MOST RECENT METHODS OF EXAMINATION. By Oswald Vierordt, M.D. Authorized translation, with additions by Francis H. Stuart, A.M., M.D. Third revised edition. Illustrated.

Philadelphia: W. B. Saunders, 1894.

This book, which is a type of the best German medical literature, has had a great success in its native land and a still greater one in this country, considering that its author is not an American. It treats of the subject of physical diagnosis from quite a different point of view from that generally followed by English-speaking writers, as, for example, Da Costa. The method which it follows makes it more valuable to the graduate in medicine than to the student of the art of healing. It is a work which no teacher of medicine should be without, and will doubtless continue to be, under the able editorship of Dr. Stuart, one of the most popular of text-books. It can certainly be heartily recommended to those who wish a reference-book on medical diagnosis.

PRACTICAL TREATISE ON NERVOUS EXHAUSTION. By George M. Beard, A.M., M.D. Edited with notes and additions by A. D. Rockwell, A.M., M.D. Third edition.

New York: E. B. Treat, 1894.

This book, which has already become a standard description of the state of the nervous system, of which it treats, has in its last two editions been kept up to the front rank by the touch of Dr. Rockwell. As he points out in the preface to the third edition, neurasthenia affords to the profession a convenient refuge when perplexed, and we fear that in many instances the careless physician is apt to give this name to a complex of symptoms without searching as deeply for the cause of the patient's complaint as would be wise. Notwithstanding the many advances which have been made in the study of this functional nervous condition, the book remains, perhaps, the best exposition of the subject in the English language, and is heartily to be recommended to those who are interested in the class of patients suffering from this annoying and serious state.

MEDICAL PRACTITIONERS' LIBRARY. TREATMENT OF THE DISEASES OF THE STOMACH AND INTESTINES. By A. Mathieu, Physician to the Paris Hospitals. 8vo, 285 pages. Parchment muslin, price, \$2.50; flexible leather, gilt top, price, \$3.25.

New York: William Wood & Co., 1894.

Many of the readers of the THERAPEUTIC GAZETTE are acquainted with the exceedingly able monograph upon "Diseases of the Stomach," by Ewald, which has been published in England by the New Sydenham Society and in America by D. Appleton & Co. The book which we now have under review is one which is smaller in its physical dimensions, and undertakes to deal not only with diseases of the stomach, but also with diseases involving the alimentary canal below the pylorus. It is more superficially written than is the German work, but should be in the hands of every physician who is forced (and who of us are not?) to treat cases of gastric and intestinal disturbance. The value of the book is increased to a great extent by the large number of foot-notes giving references to current literature, and while the work is distinctly Gallic in the method in which it is developed and the symptoms are treated, it proves to be a valuable addition to the literature of this important portion of medical practice.

OPERATIVE SURGERY. By T. H. Kocher, M.D. With one hundred and sixty-three illustrations.

New York: William Wood & Co., 1894.

This book, copyrighted in America, may be taken as indexing the most recent and popular

operative methods employed by the German surgeons. As such it is of special interest to the large class of American readers who depend for their knowledge of German methods upon the abstracts which appear in most of our current journals. In the introduction the author states that he has recommended only those methods which he has tried and proved by many years' clinical experience, and claims that the value of his contribution lies in having given simple rules for reliable and conservative surgical manipulations in every part of the body.

He advises continuous suture in closing wounds, the needle being passed alternately deeply and superficially. In the use of cocaine he teaches that several syringefuls of a one-per-cent. solution may be administered without fear, and he advises mixing cocaine in a five-per-cent. solution of carbolic acid, a method which has not met with popular favor. Ether is given the preference as a general anæsthetic. In the chapters devoted to the treatment of wounds, the secondary suture is spoken of in high praise. Under the heading of selection of the direction of the incision, Lange's investigations are quoted, showing that when two incisions vertical to each other are made they exhibit a varying retraction of the wound margins. While one gapes widely, the edges of the other remain in contact even without artificial means. This fact he has borne in mind in planning what he calls his normal incision charts, of which a number are given. Some of these do not correspond with the incisions popular with surgeons generally, though Kocher states that, fortunately, the course of the nerves and vessels largely coincides with the direction in which the skin shows the greatest tension, so that cutaneous incisions adapted to the cleavage line are least likely unnecessarily to wound important structures.

Under the heading of special operations, those done upon the blood-vessels and nerves of the face and head are first considered, after which comes a particularly valuable section on trephining and resections. Next are considered the operations in the cervical region, those performed on the thorax including osteoplastic resection, and a very short section on operations of the lung. The opening of the spinal canal receives passing notice, and nephrotomy and nephrectomy are disposed of in a few words.

The abdominal operations and intestinal sutures are briefly described. For opening of the membranous and prostatic portion of the urethra a horseshoe incision is advised, thus allowing the rectum to be turned downward

and backward, and giving free access to the seminal vesicles. The technique of operations on the rectum and of operations on the extremities, including excisions and amputations, complete the book.

In the main the operations described are much the same as those commonly used by surgeons of this country. The book will scarcely take the place filled by Treves and Jacobson, since it is not sufficiently detailed in description, and is often not expressed with that clearness and precision which particularly characterizes works of the English authors. It is, however, a useful reference-book, and one which the surgeon should have in his library.

THE JOHNS HOPKINS HOSPITAL REPORTS. Vol. III., Nos. 7, 8, 9. Report in Gynæcology, II.

Baltimore: The Johns Hopkins Press, 1894.

These reports, contributed in the main by Howard Kelly, admirably illustrated, and with tabulations which show how minor a detail is expense in the publications of Johns Hopkins Hospital, are deserving of high praise, as showing the clinical methods of a keen, skilful expert, and as illustrating his ingenuity in combating complications and new conditions as they arise in the course of his practice. The readers of current literature are already familiar with the value of these papers, as they have appeared elsewhere.

Kelly describes his method of measuring the conjugata vera by external direct method, and, by comparison with internal measurements, shows that there is not a difference sufficiently great to be of any practical importance. The illustrations show the method at a glance.

The possible errors in diagnosis from deviations of the rectum and sigmoid flexure associated with constipation are pointed out. It is shown that such abnormal position is especially prone to be associated with fæcal stasis. A number of cases are illustrated, showing how readily the tumor incident to this condition may be mistaken for diseased conditions of the parametrium, tubes, or ovary. This article is extensively illustrated.

Forty-five cases of operation for the suspension of retroflexed uterus are reported, all recovering. The author states that there are two distinct classes of patients in which the operation is applicable,—first, in young nullipara suffering from pelvic pressure, backache, and dysmenorrhœa, in whom the retroflexion has existed for a number of years; second, in multipara in whom the retroflexion is acquired. Not only was there recovery, but in nearly all

cases very great improvement in general condition.

Mary Sherwood contributes a paper upon "Potassium Permanganate and Oxalic Acid as Germicides against the Pyogenic Cocci," showing that permanganate alone in saturated solution will not destroy the staphylococcus pyogenes aureus. With oxalic acid at a temperature of 40° to 45° C., sterilization of infected threads by an exposure of one minute to its action is accomplished.

Stavely reports a number of complications occurring in cases of abdominal section through the presence of intestinal worms. Six cases are recorded, one resulting fatally. In all reflex disturbances were most marked.

Under the head "Gynæcological Operations not involving Cœliotomy," eight hundred and thirty-eight operations were performed on six hundred and thirty-one patients. There is an elaborate tabulation of these cases.

One of the most ingenious contributions is an article upon the employment of an artificial retroposition of the uterus in covering extensive denuded areas about the pelvic floor. Six cases are cited.

Murray writes a useful article upon "Photography applied to Surgery."

Russell presents the result of his work in urinalysis in gynæcology.

Robb insists upon the importance of employing anæsthesia in the diagnosis of intrapelvic conditions, and proves his points by an analysis of some two hundred and forty cases.

Kelly describes his method of direct pressure for the resuscitation of persons from chloroform asphyxia. This seems to offer no advantages over methods already practised, and does not absolutely provide for the patulousness of the respiratory tract in so far as the mouth and nose are concerned.

One hundred cases of ovariectomy performed in women over seventy years of age are tabulated; twelve cases died. Of the three patients over eighty, all recovered. There is a tabulation of abdominal operations performed at the Gynæcological Department from March, 1890, to December, 1892. The operator calls attention to the fact that at first drainage was frequently used, but towards the last has been almost completely abandoned, the glass tube being given up altogether in favor of gauze. Over five hundred cases are recorded.

A record of deaths occurring in the Gynæcological Department is appended,—first, deaths without operation; next, deaths following gynæcological operation.

These reports are most valuable, not only

because of their direct teaching, but because they illustrate how the immense material of a large hospital can be best utilized for the general education of the profession.

A TREATISE ON HEADACHE AND NEURALGIA, INCLUDING SPINAL IRRITATION AND A DISQUISITION ON NORMAL AND MORBID SLEEP. By J. L. Corning, M.A., M.D. With an appendix upon Eye-Strain as a Cause of Headache, by David Webster, M.D. Third edition. Illustrated.

New York: E. B. Treat, 1894.

Dr. Corning's book upon headache and neuralgia treats of this manifestation of functional and organic disease in an unusually thorough manner, and the addition to its pages of the valued chapters by Dr. Webster will do much towards diffusing the knowledge of specialists concerning the reflex headaches of eye-strain. The book is devoted very much more largely to the consideration of the remedial measures to be resorted to in cases of headache and neuralgia than upon the pathology or etiology of these conditions, a fact which will doubtless recommend it highly to the general practitioner. Nothing is said, however, of the operative procedures which have become so much resorted to in cases of excessive pain of the nerves of the head, or, to speak more correctly, less than one page is devoted in chapter xxiv. to this question, and the only authorities cited are Trousseau and Nussbaum in Germany. A new edition of the work upon this subject should certainly include some references to the work of Rose and Horsley in England and Keen in America in regard to the operative treatment of this condition.

DISEASES OF THE HAIR AND SCALP. By G. T. Jackson, M.D. New edition.

New York: E. B. Treat, 1894.

We have already had occasion to refer pleasantly to the value of Dr. Jackson's book upon "Diseases of the Skin," published by Lea Brothers & Co., of Philadelphia, within the last two years. The present volume, devoted solely to the consideration of diseases of the hair and scalp, is necessarily a reproduction of some of the views expressed in his more complete work. To those who are particularly interested in the subject of which the book treats it can be heartily recommended. Not only is it laden with much valuable information, but the last forty-odd pages are devoted to a copious bibliography of the subjects under discussion. We are told in the preface that every page of the original edition has been corrected and revised, and the bibliography that we have mentioned is brought down to January, 1893.



The author has evidently used every effort to maintain his reputation as an author upon diseases of the skin.

AN AMERICAN TEXT-BOOK OF GYNÆCOLOGY, MEDICAL AND SURGICAL, FOR PRACTITIONERS AND STUDENTS. By Henry T. Byford, M.D., J. M. Baldy, M.D., Edwin B. Cragin, M.D., J. H. Etheridge, M.D., William Goodell, M.D., Howard A. Kelly, M.D., Florian Krug, M.D., E. E. Montgomery, M.D., William R. Pryor, M.D., and George M. Tuttle, M.D. Edited by J. M. Baldy, M.D. With three hundred and sixty illustrations in text and thirty-seven colored and half-tone plates.

Philadelphia: W. B. Saunders, 1894.

This work, following the plan laid down in "An American Text-Book of Surgery," has been written by ten of our leading gynæcological teachers, and edited by Baldy. At first glance the modest man is somewhat shocked at the illustrations, which to the captious critic will seem unnecessary. These, however, are all for the purpose of elucidating points made in the text, and are doubtless more impressive from the fact that the patients are exhibited *in puris naturalibus*.

The individual sections of the book are unsigned. The first eighty pages are devoted to the examination and technique of operation. Both these subjects are described with that detail which the general practitioner anxious to modernize himself in methods particularly loves.

In considering menstruation and its anomalies, it is stated that obstructive dysmenorrhœa arising from flexion should be treated by the application of an intrauterine stem pessary. In dysmenorrhœa of ovarian origin, glycerin tampons may be employed. The membranous variety is treated by dilatation and curettement. Under the treatment of sterility, artificial impregnation is given only passing notice.

The inflammatory diseases of the uterus receive the careful consideration which is merited by this important subject. For gonorrhœal endometritis, irrigations of 1 to 5000 bichloride are advised, with the insertion of an iodoform gauze drain. This treatment is repeated in twelve hours, and it is stated that when the first attempts to control the disease fail we may be certain that the infection is mixed. If there be the complication of salpingitis, the operation of curetting is necessary. The technique of curettage and of uterine tamponage is described in minute detail, and the electrical treatment of the endometrium receives due consideration.

Under the headings distortions and malpositions, the use of stem pessaries is prac-

tically turned down, curettage being given the choice in cases of ante flexion. Indeed, in this whole section the pessary is given a position of minor importance, the various operative procedures being preferred. These are specifically described.

In malignant disease of the cervix the preference is given to complete extirpation of the womb, and Byrne's method of removal by the galvano-cautery is illustrated. In considering carcinoma of the body of the womb, statistics are quoted, in accordance with which, out of seventy-six cases remaining under observation after recovery, seventy-two were still well, without recurrence of the disease, from one to five years after the operation. Removal by the vagina is given the preference. There is a very fair discussion of the comparative merits of the clamp and ligature methods. The author prefers to tie out the uterus by catgut sutures. The technique of the operation is one which combines the best points of Martin's and Olhausen's methods. The cervix is curetted, charred, and sewed over; it is then dragged down and Douglas's pouch is opened. The peritoneal and vaginal edges are united by a running catgut suture; the peritoneal cavity is protected by a sponge fastened by a thread; the cervix is dragged backward and downward, is incised across its anterior surface and stripped from the bladder. The uterovesical peritoneal fold is then opened and the perineal and vaginal surfaces sewed together. Then the broad ligaments are tied off by means of catgut sutures passed with aneurism needles with right and left curves, the womb being cut free as each portion of the ligature is tied. As the womb is freed it descends lower and lower until all its attachments are severed. Whenever possible, the ovaries and tubes should be ligated and removed. The stumps of the broad ligament are then secured in the vaginal incision, the wound is nearly closed, a small strip of gauze is pushed up into the pelvic cavity through the small opening left, and the vagina is packed with iodoform gauze.

The subject of uterine neoplasms, illustrated by some admirable plates, is treated in a peculiarly lucid style.

Pelvic inflammation is treated at length. It is pleasant to see that there are still gynæcologists who do not scorn palliative treatment. This is given in full detail, together with a fair statement as to the proportion of permanent cures which may result from such treatment.

Ectopic gestation, though briefly discussed, is remarkable for the clearness and comprehensiveness of its teachings. In diseases of the

urethra, bladder, and ureters the method of demonstrating tubercle-bacilli in the urine is described, and attention is called to the value of iodoform glycerin injections. The section on bladder-diseases deals only with the general outline of the subject and particularly with the practical management of cases. Under diseases of the ureters is included Kelly's ingenious and now widely known method of catheterization. The book closes with a section on after-treatment of gynecological operations. This includes subheadings of rest, vomiting, drink, food, purgatives, management of the bladder, bathing, hemorrhage, flatulence, care of the drainage-tube, shock, sepsis, and after-complications, such as fistula and hernia.

The work is thoroughly practical and fully merits the more than ordinary favor with which it has already been received.

**HOLDEN'S MANUAL OF THE DISSECTION OF THE HUMAN BODY.** Edited by J. M. Langton. Sixth edition. Revised by A. Hewson, M.D. Three hundred and eleven illustrations.

Philadelphia: P. Blakiston, Son & Co., 1894.

The scholarly works of Macalister and of Morris, both of which have appeared comparatively recently, and the universal favor with which Gray is received, at least by American students, would seem to leave no place for any text-book of anatomy, even though it is arranged as a manual of the dissection of the human body. Yet the fact that this work has reached a sixth edition, the first having been published in 1851, is a sufficient guarantee as to the fact that it has filled a place in the past, and the admirable illustrations and the simple, graphic descriptions give promise that, in spite of increased competition, it will be received even more favorably than before. Over Macalister's work it possesses the very great advantage of simplicity both in nomenclature and expression. The illustrations of Gray are, on the whole, better, though many new and admirable cuts are found in Holden's work. Its particular merit lies in the fact that it fills more thoroughly than any other published work the requirements of the dissector. The text is richly annotated. Anomalies are given their due importance and the surgical bearing of anatomical teachings is not slighted. The nomenclature is simple, and the illustrations, although in many cases somewhat diagrammatic, serve their purpose in making clear the text. As a dissecting manual this work is worthy of hearty commendation, and is more calculated to win its place as a text-book for American students than the great majority of the books written by English authors.

**VENEREAL MEMORANDA: A MANUAL FOR THE STUDENT AND PRACTITIONER.** By P. A. Morrow, A.M., M.D.

New York: William Wood & Co., 1894.

The fact that Morrow has prepared this little work is sufficient guarantee of its excellence and accuracy. It consists of a series of dogmatic assertions covering the ground of venereal diseases. Some of these are open to objection. Thus, the law that syphilis occurs but once in the same individual has its exceptions. The definition of gonorrhœa ignores the specific nature of this affection. Again, nearly every venereal specialist now believes that gonorrhœal inflammation is rarely confined to the anterior urethra, but involves the whole of this canal. In the great majority of cases of chordee there is probably no effusion of plastic lymph in the meshes of the spongy tissue, but the painful erection is due to infiltration of the mucous and submucous layers of the urethra. Coincident with the development of epididymitis, cessation of the urethral discharge is an exception rather than the rule, and the swelling incident to this affection is not due to increased size of the testicle, but to enlargement of the epididymis, hydrocele, and infiltration of the loose connective tissue of the scrotum. Gonorrhœal rheumatism is often polyarticular. Such errors in statement of facts are minor defects almost inseparable from the terse, dogmatic style of the book. To compensate for this it has many major virtues. The diction is clear and direct, the teaching is thoroughly modern and evidently based on large personal experience, and the essential points have been culled with great skill.

**HERNIA: ITS PALLIATIVE AND RADICAL TREATMENT IN ADULTS, CHILDREN, AND INFANTS.** By Thomas H. Manley, A.M., M.D.

Philadelphia: The Medical Press Company, Limited.

This book seems to have been written not with the idea of popularizing any individual method for the cure of hernia, but rather for the purpose of presenting to the profession a dispassionate consideration of all of the recognized procedures employed in the treatment of this affection, allowing each one to draw his own conclusions from the facts thus presented. In regard to congenital hernia, the statement is made that a large proportion of herniæ of infants will disappear by hygienic measures alone before the end of the first year. For them no sort of mechanical apparatus should for a moment be thought of. Attention is called to the fact that in these hernias of children persisting to the walking age and treated by a truss, cure is accomplished generally. The

author holds that even though the hernias are liable to relapse between the twentieth and thirtieth years, advice should not be given to wear a truss as a prophylactic. Rather such patients should be fitted with a broad, comfortably fitting canvas or leather belt. He states that comparatively few children require operation. Among these few must be included infantile hernia proper, in which adhesions with the testis or spermatic cord render reduction impossible; incoercible, painful, incarcerated hernia; female herniæ which contain within their sacs any of the generative organs; impending or actual strangulation.

In treating hernias of the adult, after an historical review of the subject and directions for the employment of a truss and other supports, the radical cure of irreducible hernia by operation is considered. There is an interesting historical *résumé* of this subject, and a full description of the methods of Reissel, Championnière, McBurney, McEwen, and Bassini, and it is to be noted that Manley, although he has seen the Bassini operation performed repeatedly, is distinctly opposed to it. In reference to Bassini's reported two hundred and fifty-one operations, Manley says one hundred and ninety-eight passed from under observation within six months of operation.

The work closes with chapters upon the operative technique of strangulated hernia and its complications, manual and instrumental, and operative technique for incarcerated, non-strangulated, reducible hernia when treated by open incision. Finally, there is a tabulation of fifty-eight cases, beginning in 1885. The author states in his recapitulation that at the present time when he herniotomizes he purposes not so much securing a radical cure as placing the hernia in such a position that it will give no inconvenience, and that it may be safely controlled by a truss support. He follows no orthodox plans in operations, but is guided by the indications of each individual case.

**DISEASES OF THE SKIN: AN OUTLINE OF THE PRINCIPLES AND PRACTICE OF DERMATOLOGY.** By Malcolm Morris. With eight chromo-lithographs and seventeen wood-cuts.

London, Paris, Melbourne: Cassell & Co., Limited, 1894.

This admirable manual, written, as it evidently is, by a keen, clever specialist of exceptionally wide experience, most satisfactorily meets the requirements of the American practitioner of medicine, in that it gives him a clear, comprehensive picture of every skin-affection for the cure of which there is any chance of his

being called, and formulates for him a system of therapeutics in the following of which he can feel well assured of obtaining the best results.

Perhaps the most striking feature of Morris's work is the clearness of his style and his power of summarizing in comparatively few words facts which in other books are often spread over as many pages.

At the first glance the book would seem to have been written off-hand, but on more careful study it shows not only the results of wide clinical experience, but a knowledge of contemporary literature and a richness of reference often missed in more pretentious volumes.

A praiseworthy effort in the direction of simplicity is made in the classification of skin-diseases. This is based on modern pathological research, and in the main follows the lines traced by Unna. No violence is done either to the intelligent reader or to diseases the etiology of which is yet obscure, since these are very sensibly left unclassified.

The text is elucidated by many colored plates, such as we are accustomed to expect in atlases, but which form a pleasant surprise in a work as unpretentious as this.

This manual is a valuable addition to the bibliography of skin-diseases, and should receive a hearty welcome at the hands of the American practitioner.

**LECTURES ON AUTO-INTOXICATION IN DISEASE, OR SELF-POISONING OF THE INDIVIDUAL.** By Ch. Bouchard. Translated, with a Preface, by Thomas Oliver, M.A., M.D., F.R.C.P.

Philadelphia: The F. A. Davis Company, 1894.

Much of the literature regarding the subject of auto-intoxication in disease is so much behind the time and describes so little of the original investigations into this subject which have been made within the last few years that we were seriously in need of some such work as that now under review. This volume of three hundred pages has been written by a French author of wide reputation and thorough reliability, and in its thirty-odd chapters takes up in an interesting way pathogenic processes in general, the production and elimination of poisons, the toxicity of urine, intestinal antiseptics in health and in disease, the toxæmia of diabetes, and finally the general therapeutics of auto-intoxication. Finally, we would call attention to the fact that Gamaleia's book on "Bacterial Poisons" and Trouessart's book on "Antiseptic Therapeutics" are published by George S. Davis, of Detroit, at twenty-five cents a volume, while this work is published by the The F. A. Davis Company, of Philadel-

phia. We call particular attention to this, as some confusion seems to exist in the minds of our readers as to the books which are published by these two publishing houses.

**ANTISEPTIC THERAPEUTICS.** By E. L. Trouessart, of Paris, France. Translated by E. P. Hurd, M.D. Vols. I. and II.

Detroit: George S. Davis, 1894.

This interesting work upon antiseptic therapeutics forms a valuable addition to the literature of therapeutics in its relation to the development of toxins and the micro-organisms which produce some of them, and forms a valuable supplement to the small volume in the same series on bacterial poisons by Gamaleia. To the average physician, who cares more for the results which he can obtain than for the etiology of the affections which he treats, the second volume of this work will prove the more interesting and valuable. It is copiously dotted with prescriptions original with the author or quoted from other authorities, and it may be considered as a practical application of the information gained from a study of the subject in Vol. I. It is of very great interest to learn that so much can be done in the treatment of disease on a purely rational basis, and these little volumes provide a careful summary of the best views of the best men at this time concerning the influence of auto-intoxication on man. As the volumes cost but twenty-five cents in paper covers, and are well printed and bound, they should find a wide sale and much appreciation among the profession.

**A TEXT-BOOK OF THE THEORY AND PRACTICE OF MEDICINE.** By American teachers. Edited by William Pepper, M.D., LL.D. Vol. II. Illustrated. Philadelphia: W. B. Saunders, 1894.

Nearly eight months ago the first volume of this valuable book made its appearance, and those who were wise enough to subscribe for it at that time have waited anxiously for the appearance of Vol. II., which it was thought promised more than Vol. I. We think that these expectations have been thoroughly realized, and that Vol. II. very distinctly surpasses its predecessor in value. A carefully written scientific article upon the biology of bacteria and infection and immunity opens the volume, by the pen of Dr. William H. Welch, of Johns Hopkins University. A very large part of it—some three hundred and twenty-five pages—are contributed by Dr. William Pepper. As with all works which are written by various authors, marked unevenness in the value of each necessarily occurs. Perhaps the most unsatisfactory from a therapeutic point of view is the article

of Dr. Delafield, of New York, upon lobar pneumonia. It is not extraordinary that the mortality of this disease is as high as it is if the treatment here recommended is carried out so irrationally. No distinction is made as to the treatment of the disease in its various stages, and we are simply told that this drug or that drug may be employed, without much preference being expressed for any plan or distinct indications being named for the use of each drug. We notice that digitalin is recommended in place of the other preparations of digitalis, although it is universally recognized that the action obtained from this substance is not identical with that of the tincture. We think it unfortunate that so little reference is made to the treatment of pneumonia by the injection of toxins. This subject should not have been referred to at all, or else sufficiently considered to give some information on the subject. Under the articles on kidney-disease we notice that the term of acute "productive" nephritis is introduced instead of acute diffuse nephritis, and it is natural that in these articles the well-known views of Dr. Delafield concerning the distribution of inflammatory processes in the kidneys are thoroughly exploited.

In the article by Dr. Fitz upon acute peritonitis we note with much interest the position which this eminent authority maintains in regard to the use of salines. He supports the views already expressed in the editorial columns of the THERAPEUTIC GAZETTE and also those of Dr. Maurice Richardson,—namely, that the saline treatment of peritonitis is not to be resorted to unless the cause of the disease in an individual case is thoroughly understood and the physician is confident that active ulceration or perforation of the bowel is not the cause of the trouble. Opium is the remedy which Dr. Fitz recommends, thus supporting the views originally expressed by Alonzo Clark. The index completing the volume is very full and complete.

The work is a credit to American medicine, to its gifted editor, and to the gentlemen who have done so much to make its pages valuable.

**NOTES ON NURSING IN EYE-DISEASES.** By C. S. Jeaffreson, M.D., F.R.C.S.E.

Bristol: John Wright & Co., 1894.

In the last number of the THERAPEUTIC GAZETTE we had occasion to refer in complimentary terms to a book on an allied topic, as being the first one of its kind which has come to our notice. Usually a new departure in any direction is speedily followed by others in the same line. Evidently this is true so far as

manuals on ophthalmic nursing are concerned. Dr. Jeaffreson's small treatise of less than one hundred pages emphasizes general rules of nursing applicable to ophthalmic practice, and chiefly those which he has found useful in his own public and private work. In his preface he states that it has been suggested to him that a short anatomical and physiological description of the organs of vision should have been included, but we think he is right in having omitted it, and have always believed that both in the lectures to nurses, as well as in the books that have been written on the subject, too much attention has been paid to these anatomical and physiological considerations and too little to the practical side of the subject. The present book is satisfactory in the main, and gives to those who are interested in the subject of nursing in eye-diseases the most important directions for the carrying out of the various duties which will fall to their hands, and so far as we can see, in the space devoted to the topic, all of the necessary directions are plainly and clearly enunciated. It is promised that if the book reaches a second edition, which we have no doubt will be the case, both the matter and the illustrations shall be extended.

STUDENT'S MEDICAL DICTIONARY. By Alexander Duane, M.D.

Philadelphia: Lea Brothers & Co., 1893.

One might perhaps be pardoned a little surprise at the appearance of still another medical dictionary, but the work before us is one that will well bear comparison with its fellows. The book consists of a series of major titles, printed in heavy type, each beginning a separate paragraph, a series of subordinate headings being placed in the body of the paragraphs. The derivation of each word is given in brackets, the root words being placed in italics. The Greek letters are given in those of our own alphabet, which seems rather a questionable procedure, as the advantage given to those unacquainted with Greek can hardly, in the opinion of the reviewer, compensate for the loss of the Greek letters.

Space has been often saved by the omission of obsolete words, much of which has been well utilized under the important headings by the insertion of matter descriptive and explanatory, when a mere definition would hardly be sufficient. The author has arranged in tabular form the muscles, arteries, nerves, and canals, making easy and valuable tables of reference. Under the more important diseases a short sketch is given of their causation, symptoms, and treatment, and a brief description is found

of the structure and functions of the main organs. Under each drug a short outline is given of its physiological actions and therapeutic uses, also all its preparations official in the latest editions of the Pharmacopœias of the United States, Great Britain, and Germany. The definition of each word is clear and full, and Dr. Duane's book fully deserves to be ranked among the first works of its kind.

E. E. G.

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## Correspondence.

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### LONDON.

(From our Special Correspondent.)

From time to time considerable interest has been evoked in the medical world by statements to the effect that patients suffering from malignant disease have been considerably benefited by an intercurrent attack of erysipelas. The evidence on which such statements are based is indisputable, and it was at one time suggested that a legitimate treatment for inoperable malignant tumors would be to put the patients in the way of becoming infected with erysipelas. This was actually done in several cases; but the objections to such a proceeding were numerous, the chief of them being the uncertainty whether the patient would contract the disease at all, and the doubt whether the erysipelas, if successfully communicated, might not prove at least as dangerous as the original malignant disease. In one or two cases, in fact, it was found impossible to control the erysipelas, the patient succumbing rapidly to its influence. Such cases naturally disinclined medical men to run any further risks of a similar nature, and it was not until the bacteriology of erysipelas became better known that we heard of further experiments. When it became possible to isolate a streptococcus from a case of erysipelas, to cultivate it under artificial conditions, and so to modify its pathogenic properties as to have the effects of its introduction into the economy fairly under control, inoculation with such a culture in a case of malignant disease became at once a more rational proceeding. Many cases have been treated in this way, notably by Spronch, of Utrecht, and Coley, of America, and the results have been extremely encouraging. Still, however, it has been felt that it is a somewhat dangerous expedient to adopt, for it is never possible to absolutely assure one's self that a culture of the streptococcus, thus employed, may not unac-

countably take on extremely virulent characters and produce unpleasant results. It has also come gradually to be admitted that any good results produced by the infection have been due to toxins resulting from the growth of the microbes in the tissues, the natural outcome of such an idea being to try and secure the formation of the same substances outside the body, to free them from micro-organisms, and to employ them in the same manner as one would any other drug. I believe that Coley has actually done this, and has employed filtered cultures of the *S. erysipelatis* with some measure of success, especially in cases of sarcoma. A still further refinement, however, seems necessary. It is hardly satisfactory to work with filtered cultures, as one can never be sure of the amount of active substance contained in them. What one actually wants is to have the active substance isolated from the culture and kept in a dry state, so that it may be administered in weighed quantities, and may also be free from the liability to undergo change, inseparable from all solutions of such substances. Roger, in Paris, and Bokenham, in this country, have both succeeded in isolating a toxin from cultures of the *S. erysipelatis*, which belongs to the class of albumoses, and which seems to possess all the properties of filtered cultures. I do not know whether Roger has done so, but Bokenham has succeeded in preparing the above-mentioned albumose, and preserving it in a dry state over sulphuric acid, so that it retains all its activity for at least several weeks. It was capable of use in weighed doses, and gave rise to febrile reaction in animals. Quite recently, Mr. Bokenham has tested the effect of this substance in a case of inoperable sarcoma of the back, and already the results are most promising. A weighed dose was dissolved in sterile distilled water and injected under the patient's skin, not necessarily into the affected part. No effect was observed, either local or general, for some hours; then there began a gradual elevation of temperature, until at length the thermometer stood at a point about three degrees above normal. At the same time the nodules of tumor became tender and more prominent, showing distinct signs of congestion. Next day some of the nodules showed evident signs of breaking down, a wound over one of them opening and emitting a yellowish discharge. On the next day the temperature was still somewhat elevated and the wound discharging, some small lumps of tumor tissue becoming detached. The other nodules were distinctly softer to the touch and seemed to be undergoing a process of dispersion. A second

injection was followed by very similar results, and the outlook was altogether encouraging, when an unfortunate accident put an end to the supply of toxin.

It is hoped, however, to continue the treatment at no distant date, the chief difficulty being to obtain a streptococcus of such great virulence as to yield a toxin of the necessary activity to produce a rise of temperature, without which apparently no effect is produced, either local or general. I shall take an early opportunity of referring again to this most interesting case.

I saw an interesting case a fortnight or so ago at the Queen's Jubilee Hospital,—a small general hospital in West Kensington. The patient, a middle-aged woman, had for years been suffering from obstinate lupus, there being a patch of particular severity situated just over the right wrist and extending nearly round the forearm. All manner of treatment—by scraping or by local applications—had been tried without avail. It was decided, as a last effort, to very thoroughly scrape the whole of the affected surface and to apply large skin-grafts to the parts. This was done, all the diseased tissues being as far as possible removed and the tissues laid bare almost down to the muscular layer. With a sharp razor very thin sheets of cuticle were shaved from the patient's own thighs, in such a way that pieces nearly two inches square were got of about the thickness of blotting-paper, without causing more than a slight superficial oozing from the denuded parts of the thigh. Several of these were sliced off, each being immersed in some warm water until sufficient had been obtained to cover the whole of the scraped surface. The grafts were then applied and covered with a sheet of oiled silk, the outer surface of which was then dusted with iodoform and covered with aseptic dressings. After a few days it was found that nearly all of the skin thus grafted had become attached, the place presenting a healthy granulating surface. Every day the oiled silk was removed with as little disturbance of the subjacent parts as possible, washed in carbolic lotion, and replaced. Iodoform was again dusted on and the whole covered. At the present time, more than a month since the operation, the patch still shows no signs of breaking down. It is covered with healthy skin, and the patient professes complete freedom from pain, a condition she has not experienced in some years. I hope to have an early opportunity of trying this operation in another similar case. I am told that it has already been practised in several instances in Australia and New Zealand.

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## Original Communications.

### QUININE AS A REMEDY FOR ENURESIS.

By CHARLES S. POTTS, M.D.,

Instructor in Nervous Diseases in the University of Pennsylvania;  
Assistant Neurologist to the University Hospital.

IN a communication to the Philadelphia Neurological Society, which was published in the *Journal of Nervous and Mental Diseases* for April, 1893, Professor H. C. Wood proposed the theory (for the proof of which we refer the reader to the original paper) that choreic movements were due to two factors,—viz., first,

that the motor power of the spinal cells is weakened; and, second, that the power of the inhibition apparatus—the so-called Setschenow's centre, which controls motor discharge from these cells—is weakened to a greater extent than is the discharge power. As quinine is a stimulant to the inhibitory centre, its use was proposed as a remedy for chorea.

At the meeting of the American Medical Association, held in June, 1893, the writer, in conjunction with Dr. W. A. N. Dorland, presented a paper, subsequently published in the *University Medical Magazine* for July, 1893, and also in the *Journal of the American Medical Association*, in which they detailed seven-

teen cases of chorea treated with this drug with flattering success.\*

Among the cases so treated was one, the history of which will be detailed below, in which enuresis was a marked and troublesome symptom, and it was noted that as soon as the quinine was administered this symptom disappeared. At that time it occurred to the writer that this fact was a confirmation of Dr. Wood's theory, as enuresis is probably caused in a large number of cases by the failure of the higher centres to properly control the reflex act by which we empty our bladders, associated with a general lack of muscular power and tone, and enuresis is a more or less frequent accompaniment of chorea. It therefore seemed rational that quinine should prove useful in this condition, provided all other possible causes, such as adherent prepuce, rectal irritation by worms, etc., were excluded.

While the number of cases in which it has been tried is exceedingly small (only two), it has seemed to be worth while to report them, for the reasons that they seem to be a confirmation of Dr. Wood's theory for the choreic movement, and that others may be tempted to try the drug in similar cases. It should be borne in mind that the remedy must be administered in full doses.

CASE I.—T. A., aged fifteen, a school-girl, presented herself at the clinic on June 1 with her fourth attack of chorea, and with the additional history that she had always, since infancy, wet the bed at nights. No other cause for this than her general neurotic condition being present, she was given 6 grains of quinine sulphate five times daily. Five days later she reported with the choreic movements lessened, and she also stated that she had not wet the bed since taking the medicine. This improvement continued, the quinine being in the mean time increased to 40 grains daily, until June 26, when Fowler's solution was substituted. On the 30th she returned, saying that she had again wet the bed. She continued to do this until July 3, when the quinine treatment was returned to, with the result that the enuresis immediately ceased.

This treatment was continued, together with syr. hypophosphit. co., for several weeks, after which the dose of quinine was gradually reduced, and when last seen the patient was perfectly well.

I would call special attention to the facts of the enuresis returning as soon as the use of the quinine was stopped, and to its immediately

ceasing when the use of the drug was returned to.

CASE II.—M. McL., aged ten, a school-girl of nervous temperament and small for her age, came to the clinic on July 17, with the history that, since having scarlatina when five years old, she had wet the bed *once and sometimes twice nightly*. No apparent cause being present for this, she was ordered 2 grains of quinine four times daily. On July 21 she reported as being much better, and had missed her nightly attack the second night after beginning the medicine. This being the first time she had missed since the beginning of her trouble, the medicine was increased to 5 grains five times a day. Five days after this she returned, stating that she had not wet the bed since her last visit. The dose was then decreased to 2 grains t. i. d. On the 31st she reported having had one attack. From this date until August 11 she had two attacks, and her medicine was increased to 16 grains daily, with the result that she had only three attacks from the 11th until the 28th. The quinine was then stopped, and she was given a tonic and small doses of belladonna. She was not seen from this date until December 4, when she stated that she had not had an attack since her last visit in August.

In this case, as in most of our cases of chorea, the quinine seemed to lose its effect in time, so that it was necessary to continually increase the dose; it was for this reason that its use was stopped and the other treatment substituted. It would seem that in this condition, as in chorea, quinine may prove useful to produce a rapid effect, but to secure permanent results the system must be built up by tonics and other appropriate measures in order to increase the general muscular tone, which it will be remembered is also lacking. If subsequent trials should give similar good results, the use of quinine should be preferable to that of belladonna, the old stand-by in this class of cases. In our paper upon the use of quinine in the treatment of chorea, we called attention to the fact that the patients bore large doses without experiencing any signs of cinchonism; we might almost compare it to the tolerance of typhoid fever patients to large amounts of alcohol. Full doses of belladonna always cause uncomfortable and annoying symptoms; therefore we escape these; and even if the symptoms of cinchonism should manifest themselves, they are much more easily borne. In using quinine, also, we are substituting a comparatively harmless drug for an active poison, and hence do away with the dangers of possible overdoses being administered and consequent

\* This success still continues.



poisoning, which is a desideratum, especially in dispensary patients. Again, in the limited experience which we have had, it has seemed that the quinine has acted quicker than the other commonly employed remedies.

*SACRAL RESECTION, WITH REMOVAL OF  
UTERUS, OVARIES, POSTERIOR WALL  
OF VAGINA, PERINEUM, AND LOWER  
PART OF RECTUM; FÆCAL FIS-  
TULA; ANÆMIA; RETRO-  
FLEXION OF THE  
UTERUS.*

CLINICAL LECTURE DELIVERED AT THE JEFFERSON HOSPITAL,  
OCTOBER 24, 1893.

BY E. E. MONTGOMERY, M.D.,  
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SACRAL RESECTION.

**G**ENTLEMEN:—Two weeks ago I brought before you this patient, with the following history: She is twenty-three years of age, unmarried, and has been suffering for several months with disease of the rectum. She entered the hospital in August last, and upon examination the entire rectum was found to be ulcerated upon an indurated base. She was suffering intense pain from passage of feces over this ulcerated surface, and quite a stricture had formed. At that time, as a preliminary operation, Dr. Hearn did what is known as the Madyl operation for colostomy. This consists in making an incision in the inguinal region into the peritoneal cavity, raising up the colon, and passing beneath it a glass rod, packing around the opening iodoform gauze to produce inflammatory adhesions fixing the gut in the wound. After the union became sufficient, the intestine was opened by a thermo-cautery, and later the intestine cut through. As a result of this operation, all the evacuations have taken place through this opening, the bowel has been relieved from the irritation, and the patient has been very much more comfortable. Upon examination it was found that the rectum was involved about four inches up. Infiltration had extended through the vagina, so that the posterior vaginal wall was firm and rigid; there was a point of induration and ulceration over the perineum which extended along the posterior margin of the vulva half-way up the labium upon either side. It was quite evident that any operation to afford hope of radical cure would necessitate the removal of a good portion of the rectum, the posterior wall of the vagina, the perineum, and probably the uterus.

Accordingly, two weeks ago I brought her before you, made an incision over the sacrum, extending from the left iliac synchondrosis across the median line, terminating at the side of the anus. Flaps were dissected back, laying bare the coccyx and lower end of the sacrum. The coccyx was enucleated; a part of the right side of the lower two sections of the sacrum removed with bone pliers. Bleeding was arrested by sponge pressure and hæmostats, and the rectum pushed off from the anterior surface of the sacrum. \*The rectum was then dissected on either side, seizing vessels with hæmostats as they bled, and with the finger in the vagina the perineum was seized and cut away until beyond the border of the involvement of the labium. On either side the vagina was cut through until the fundus was reached. We then opened the peritoneum to the right side, grasped the fundus of the uterus, and ligated its broad ligaments, securing in this way the ovarian and uterine arteries, and cut away the uterus on the right side. The left side was then ligated in the same manner and the uterus and ovaries removed. The rectum was now drawn down until healthy tissue was reached, which was then cut across, and as it was found that the rectum was filled with old indurated fecal masses, the wound was covered with gauze pads, the rectum held down, and with the finger these masses were removed. After the rectum was cleansed, the peritoneal opening was sewed up, the bowel stitched fast to the mucous membrane of the anterior wall of the bladder, and laterally and posteriorly to the skin. The edges of the skin on either side were drawn down and fastened to the vagina by a continuous catgut suture. This was done hurriedly, owing to the extreme debility of the patient, she being exceedingly anæmic, pulse imperceptible at the wrist, and the respiration bad. Hypodermic injections of strychnine were given while the operation proceeded, until about one-third of a grain had been administered. It was given subsequently every half-hour, and later every hour, in  $\frac{1}{20}$ -grain doses, until the patient recovered from the shock. Shock was necessarily profound. The next morning after the operation her temperature ran up to 102° F., which was evidently reaction from the shock, as it soon subsided. About a week after the operation she had a severe chill; temperature rose to 105° F. On examination it was found that some secretions were locked up in close proximity to the peritoneal cavity, and it was undoubtedly these which gave rise to the elevation of temperature, for, as soon as they were opened and

drained, the temperature subsided. Some sinuses were opened up, the cavity thoroughly washed out with sulphurous acid solution, the parts dressed twice daily, when the temperature subsided and is now normal. She eats and sleeps well. There is a larger surface here to cicatrize. It will take some time before the cicatrization is complete. You notice on the left side the walls are more firmly held down and the line of the raw surface is much narrower than upon the right. This is due to the fact that, in separating the buttocks, traction has been made from the right side, causing the sutures to be pulled out. The wound is perfectly clean and healthy; the rectum is united to the skin externally and to the vagina.

This operation of resection was first done by Kraske in 1885, and it was performed and advocated by him in cases of rectal disease involving the middle and higher part of the rectum. The procedure has lately been suggested by Hochenegg and Herzfeld for removal of the uterus and ovaries in diseased conditions. A number of modifications of the Kraske operation have been suggested in the incision of the sacrum, some of them with a view of restoring the parts to the normal condition after the operation is completed. Thus, in making the sacral incision, we made it obliquely, leaving one side of the sacrum undisturbed. Bardenhauer modified this by making transverse section below the third sacral foramen. I think the preferable procedure, however, is to remove but one side, as thus the nerves making their exit from the fourth sacral foramen are undisturbed. These nerves supply the rectum and bladder, and if we destroy them upon both sides it will necessarily cause a certain amount of irritation of those viscera. If one side is left undisturbed it compensates for the loss of the other, and the patient suffers no inconvenience. We dwell upon the importance of making the incision below the third sacral foramen, for the reason that, if this foramen is involved, it would result in injury of the third sacral nerve, which assists in the formation of the sacral plexus, and injury of it would consequently influence locomotion in the lower extremities. When this operation was proposed some time ago, a number of physicians objected to it, claiming that it would be likely to result in injury to the spinal cord; they had forgotten, however, that the cord was not continued below the second lumbar vertebra, excepting as the filum terminale, and in the lower part of the sacrum there is no canal. Consequently there is no danger of injury of the spinal cord in our procedure. The side of the vertebra removed will

depend somewhat upon the purpose of the operation. If the operation is on the rectum alone, you would make the incision on the left side, as the bowel is situated more to that side. If you wish to operate on the uterus without disturbing the rectum, the sacrum should be resected on the right side, when there will necessarily be less displacement of the rectum. With the removal of the sacrum there is not infrequently considerable bleeding from the median sacral artery. This is, however, readily controlled by sponges or may be seized by the hæmostatic forceps. The vessels on the side of the rectum are usually controlled by hæmostats. When the vessels are torn, hemorrhage is usually slight.

In reviewing the operation on this patient it occurs to me that I made a mistake in one part of it, and that was in having cut away the diseased bowel before I had closed the peritoneal opening. The opening in the peritoneum might have been readily sewed up before the bowel was opened, thus decreasing the danger of fæcal infection. Suturing the intestine to the anterior wall of the vagina, and posteriorly to the skin over the sacrum, made the artificial anus in the upper part of the cleft. Now, if this patient recovers her health completely, we may very readily open around the site of the former operation, pick up the two ends of the bowel, and establish an anastomosis, thus reforming a continuous canal. This, however, will be left entirely to the option of the patient. The experience of this case has, however, demonstrated the advisability of preliminary colostomy in order to prevent the passage over the newly-united surfaces of a large mass of fæces. If the wound closes completely there will be left simply a cleft at this point into which the fæcal matter will pass, the anterior margin of which is formed by the anterior wall of the vagina. This is, of course, an exceedingly unpleasant condition, but we have to consider the fact that this individual was suffering from a diseased state which was beyond all relief otherwise than by such a procedure. The operation of sacral resection I have done in five patients. In the first we removed the uterus, ovaries, and about three inches of the middle part of the rectum. The two ends of the bowel were stitched together, leaving a sphincter below. The patient had not had an effective movement of her bowels for several weeks, so there was a large accumulation of hard fæcal matter in the upper part of the intestine. A couple of days later the fæcal matter was forced against the wound, causing the lower segment of the bowel to be pushed off and the extravasation of

fæces into the wound. This necessitated re-opening the wound, scraping, washing, and curetting away the fæcal matter, and the patient was kept perfectly quiet thereafter. Four weeks later the ends of the gut were dissected up and brought together by sutures, which resulted in union. The patient succumbed six months subsequently to a return of the disease.

The second patient was one with cancer of the cervix; a woman who had never given birth to children, and in whom, consequently, the vagina was undilated. The uterus was fixed by pelvic exudation and involvement of the ovaries and tubes. In that case the incision was made to the right side of the bone, the rectum pushed to the left, the peritoneum opened, the uterus seized, lifted up, and ovaries, tubes, and uterus removed. After ligation of the vessels, the vaginal walls and the peritoneum above it were brought together by sutures, shutting off the vagina from the abdominal cavity. The peritoneum posteriorly was then closed and the wound closed with sutures, leaving a gauze drain. After a somewhat slow convalescence, the patient entirely recovered and enjoyed good health until a year after the operation, when she returned to me, showing the presence of epithelioma of the upper part of the vagina. She was then subjected to curetting and cutting away of the diseased tissue as far as could be done and the cavity packed with iodoform gauze. She recovered, the surface healed over completely, and although something over a year has passed, she has not as yet had any return.

The third operation was performed for stricture of the rectum, extending about four inches up the gut. Five inches of the bowel was removed and an artificial anus made at the junction of the lower part of the sacrum. This was done two years ago this coming November. Three months ago there was developed a cicatricial ring around the external opening. This contracted until it would not admit the point of the little finger. A month ago section was done, and the patient has now been at home two weeks. I saw her last night in Altoona, and the bowel was perfectly healthy.

The fourth patient was a woman over fifty years of age, upon whom we operated in this hospital a year ago. She was suffering from cancer of the rectum, which had infiltrated the posterior wall of the vagina. The portion of the bowel and of the posterior wall of the vagina were removed and an artificial anus established posteriorly. This patient had suffered for over a month from loss of rest, continued pain and distress from futile efforts to evacuate the bowels, and consequently was not in a good condition

for operation. Suppression of urine followed, and she died at the end of forty-eight hours.

The fifth case is the one I have now before you; so in these five cases I have given you my experience in this work, in which four patients have survived and one died. In this, as in all my work, I propose to show you not only my successes, but to tell you of my failures. I do not believe, as a teacher, I am doing rightly if I do otherwise.

#### OPERATION FOR FÆCAL FISTULA.

In harmony with this purpose, I bring before you a patient upon whom I operated last March, in this house, for a large collection of pus in the pelvis. It was necessary in removing this pus collection to tear up extensive adhesions, after which a gauze drain was introduced. A few days after the operation, when the gauze had been removed, there was noticed coming from the fistulous tract left by the gauze drain fæcal matter, which increased in quantity until at one time the greater part of the movements came through the abdominal wound, and from the appearance of the material thrown out it was evident that the opening was situated in the small intestine. The patient was consequently rather poorly nourished. I operated on this patient three weeks ago last Friday, with a view of finding out the point at which the fistula opened, and closing it. I assure you there is no operation that is more trying, requires more patience and courage, than one done for a fistulous opening which is situated deeply in the abdomen and discharges from which have given rise to extensive inflammation and adhesions of the intestines. Everything was found matted together. After tearing up the adhesions, two openings were seen in the intestine, into one of which the end of a pencil could be introduced, while the other would admit the finger. These openings were closed with continuous catgut suture. In opening the wound we had to go through an abdominal surface that was infiltrated from contact of fæcal matter. It was in a state, consequently, of inflammation and induration. The whole external surface of the wound was scalded with fæcal matter and, as a result, was with difficulty cleansed. The recti muscles were so rigid that in breaking up the adhesions and exploring the cavity thoroughly it was necessary to make a transverse incision. In closing the wound, buried silkworm-gut sutures were used, and considerable traction was necessarily made in order to bring the surfaces in apposition. The wound in the intestines has been completely relieved. The bowels move regularly, and the patient's general con-

dition is better. There has been some inflammation, however, in the line of the wound, and an abscess has formed. I have taken out one of the deep sutures in the upper part of the wound, and I notice to-day inflammation in the lower portion. It will probably be necessary to remove the other sutures before she is entirely relieved of this distress.

#### ANÆMIA.

The next patient is a young lady, whom I brought before you some time ago suffering from profound anæmia, with painful menstruation, or rather pain preceding menstruation for a week, which was felt in the right side and continued during the entire period. She was placed upon a plan of treatment which consisted in regulation of the bowels, administration of quinine, strychnine, and arsenate of iron, good nourishing food, and moderate outdoor exercise. As a result she is greatly improved, she has menstruated without pain, and the pain and distress in the pelvis have disappeared. You notice by her appearance that she is very much improved, showing more blood in her face. I bring her before you to emphasize the assertion that conservative measures should be practised in these cases of supposed inflammation of the ovaries, and that on no account should pain be considered as an indication for an abdominal operation. Let an abdominal operation be the very last thing done, and only after trying all other means. I can assure you there is no class of cases which give promise of less favorable results from the removal of the appendages than these very patients in whom there is an absence of enlargement or marked change and where the operation is done for pain alone. There are cases, probably, in which there is a certain amount of neuritis to which the pain is due, and the removal of the appendages does not necessarily affect it. Such patients are often neurasthenic, and we may operate and reoperate and they will continue to suffer just as much pain.

#### RETROFLEXION OF THE UTERUS.

The next patient is a woman forty-nine years of age, who comes to us through the kindness of Dr. Eshleman, a graduate of last year. She complains of considerable pain in the abdomen. She has had eight children, three of whom were instrumental, and after each confinement was laid up for a number of weeks, suffering from pelvic inflammation. She has had five miscarriages, convalescence after each of which was slow. On examination we find a mass situated in the posterior part of the pelvis, which is

movable, and between it and the cervix there is a distinct angle. Let me impress upon you in examining patients to proceed carefully from the time the fingers are introduced; indeed, examine by inspection before their introduction. In normal conditions the labia minora are hidden from view by the labia majora. If they vary from this condition, there is just to that degree a variation from the normal. If the vulva stands open, you will realize that there must be a loss of control of the sphincter. Inspection also would disclose if there is any protrusion from the vulva. As I turn this patient around, you notice the anterior surface projects immediately below the opening of the urethra. This projection you will recognize as a slight prolapse of the anterior wall of the vagina. As the fingers pass up, you notice the condition of the cervix, and here the anterior lip is the longer, while the posterior is flush with the vagina. We notice also that the cervix and the os look downward in the axis of the vagina. Now, as has been said, in this patient the uterus is large, and between the cervix and the mass behind there is a distinct angle recognized, although the two masses are evidently parts of the same body. The uterus is found movable, and with two fingers placed beneath the fundus, pressing upward, I am enabled to restore the uterus apparently to its normal position, although the fundus of the organ cannot be felt forward. Now, this mass, felt through the posterior cul-de-sac of the vagina, may consist of a growth of an ovary, of an exudation from the posterior surface of the uterus, or of a fibroid growth projecting from its posterior wall. That it is not an exudation is evident from the fact that the uterus is freely movable; that it can be replaced in its normal position. There is no irregularity upon it; there is an absence of that sensation of fluctuation which is not uncommon in such conditions. A fibroid tumor in this region is not an infrequent occurrence. It is readily distinguished by the conjoined manipulation, pushing the fundus forward before bringing it in contact with the external hand; in this way we are enabled to determine the fact whether a tumor is present and the measures to be resorted to for its removal. As to the possibility of retroflexion, the situation of this mass posteriorly, the angle between it and the cervix with which the connection may be traced, or inability to determine a mass, in the normal situation of the fundus, its size and shape, all lead me to be confident we have to deal with a retroflexion of the uterus. Retroflexion is not an unusual occurrence following parturition. The organ

settles downward, comes near the axis of the vagina, and as it does so the intra-abdominal pressure is directed against the uterus until it is driven down. There is no class of cases that are more difficult to treat by mechanical means than these very ones of retro-displacements; the ligaments become so relaxed that it is necessary to use an instrument sufficiently large to keep it up. This is likely to lead to still further rolling backward of the fundus and to its being pinched between the cervix and the uterus, so that in cases of marked retroflexion I prefer to resort to measures to fix the uterus forward. Now we may do one of two operations for fixing the uterus forward. One of these consists in shortening the round ligaments,—an operation known as the Alexander. The other—ventro-fixation—by opening the abdomen, drawing up the uterus, and stitching it fast to the lower angle of the wound by buried sutures. Of these two procedures I prefer the latter, for the reason that but a single wound is made, while in the Alexander operation there are two. In the Alexander operation the round ligaments are not always easily found. They are frequently atrophied, do not run out well, particularly if there has been any inflammatory disease in the pelvis, and even when drawn out they may be so attenuated as not to be serviceable. The operation is not always free from danger, as the manipulation necessary to find the ligaments sometimes leads to suppuration, and if a ligament becomes infected it may slough off, slip backward, and carry infection into the peritoneal cavity; while with ventro-fixation we are able to see the uterus, draw it well forward, and make sure that it is in its proper position, and thus establish its more secure fixation. This is the operation we will advise in the patient before us.

#### THE PHYSIOLOGICAL ACTIONS OF ALCOHOL.

ABSTRACT OF A PAPER PRESENTED TO THE SECTION ON THERAPEUTICS OF THE FIRST PAN-AMERICAN MEDICAL CONGRESS, HELD AT WASHINGTON, D.C., SEPTEMBER 5, 6, 7, AND 8, 1893.

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Spanish-speaking Secretary (Section on Therapeutics) of the First Pan-American Medical Congress, etc.

ALMOST from time immemorial alcohol, in some form or other, has been used as a beverage the world over, and for a long time as a remedial agent in the treatment of disease. Without attempting to discuss the uses of the

drug in disease, a subject in itself quite extensive, I will confine myself to a careful study of the influence which alcohol exercises on the various parts of the economy,—that is, its physiological actions.

Both experimental and clinical observations have shown that alcohol acts decidedly on the different systems, producing changes either temporary or permanent, according to the amount of the drug ingested and the time employed in its administration. How such changes are brought about by the actions of alcohol it is the purpose of this research to examine and, if possible, to determine. The evidence which I will bring forward shall be mainly experimental.

#### GENERAL ACTION.

The effects produced by alcohol in small amounts are those of general stimulation, followed by those of depression when given beyond what may be termed the true physiological limit. In toxic doses, when administered for a short or for a long time, there are produced two conditions well known and sufficiently described by various writers on the subject,—acute and chronic alcoholism.

Alcohol-poisoning does occur, and, whether in the acute or chronic form, it often produces death *per se*. In many fatal cases death has been preceded by convulsions.\* How death is caused by the drug has not been very accurately determined. It is certainly often produced by failure of the respiration. Such an observation, at least, I have frequently made in the course of my experimentation upon the lower animals.

But the actions of alcohol are so varied that I will endeavor to study them on the different systems separately.

#### ON THE NERVOUS SYSTEM.

*On the Peripheral Nerves.*—When a very small amount of alcohol—say about 5 drops well diluted with water—is injected hypodermically into a common frog (*Rana esculenta*), there are produced phenomena of general excitability, as is evinced by restlessness of the animal, hurried respiration, slightly increased reflexes, and acceleration of the heart's action. These effects soon pass off and the batrachian resumes its normal condition. That alcohol, in minute quantities, does excite the peripheral nerves appears to be demonstrated by the results of the following experiments:

*Experiment 1.*—Took a medium-size frog. Ablated cerebrum, and, after shock had passed,

\* *Philadelphia Medical Times*, vol. vi. p. 463.

reflex action, as tested with acidulated water, was manifested in twelve seconds. Injected under the skin 5 drops of alcohol well diluted with water at 12 M. 12.15, reflex action in ten seconds; 12.20, reflex action in ten seconds; 12.30, reflex action in eight seconds; 12.50, reflex action in ten seconds.

*Experiment 2.*—Medium-size batrachian. Destroyed brain, tied the blood-vessels of right leg, and waited for the disappearance of shock. Reflex action was then tested as in previous experiment. It was manifested in both legs in ten seconds. Gave hypodermically, at 10 A.M., 5 drops of alcohol diluted with water. 10.20, reflex action in left leg in eight seconds, in right leg in ten seconds; 10.30, reflex action in left leg in six seconds, in right leg in ten seconds; 11.20, reflex action in both legs in thirteen seconds.

When the abdominal aorta had been ligated previous to the administration of the drug, no modification in the reflex function was observed upon the lower extremities.

If the alcohol is applied locally to the nerves, in small doses, the same slight increase of excitability is noticed, as proved by the experiment that follows, example of many others performed:

*Experiment 3.*—Destroyed cerebrum of a large frog and exposed the right sciatic nerve. After shock had passed off, a feeble current of electricity applied to the nerve-trunk by means of a Dubois-Reymond apparatus produced, at fifteen cubic centimetres between coils, contraction of the tributary muscles. At 9.45 A.M. gave 5 drops of alcohol subcutaneously. 10.15, distinct contractions of the muscles are elicited at twenty cubic centimetres between coils; 10.25, the same result at thirty, at thirty-five, and at forty cubic centimetres between coils.

These results are confirmatory of those previously obtained by Mommsen.\* This investigator found that alcohol, when brought in contact with them, distinctly increased the excitability of the peripheral motor fibres.

On the other hand, there is no doubt that large and toxic doses of the drug cause depression and paralysis of the peripheral nerves. I have frequently observed that, after death of frogs killed by alcohol, the nerves respond to electrical stimulation very slightly or not at all, these variations depending upon the quantities of the drug used. Wood† has found that the vapor of alcohol is capable of producing the

stupor known as anæsthesia, and, further, that this anæsthesia may be deepened into death, accompanied by all the phenomena of fatal ether narcosis. The following experiments explain themselves:

*Experiment 4.*—Large frog. Injected hypodermically 5 cubic centimetres of a twenty-five-per-cent. solution of alcohol at 1.20 P.M. 1.30, the animal shows no disposition to move about; respiration slow; apparently in a stupid condition. 1.45, movements exceedingly sluggish; greatly diminished reflexes. Died eventually from respiratory failure. After death, nerves and muscles respond weakly to electrical irritation.

*Experiment 5.*—Destroyed brain of a medium-size frog, and, after shock had passed away, tested reflexes by means of acidulated water. Reflex action was manifested in ten seconds. Gave, at 1.50 P.M., 5 cubic centimetres of a twenty-five-per-cent. solution of alcohol. 2.00, reflex action in fifteen seconds; 2.10, reflex action in twenty-five seconds. The reflexes continued to diminish until they were finally abolished. Similar results have been obtained by Dogiel,‡ who found the reflex susceptibility at first somewhat, and afterwards decidedly, decreased by large amounts of alcohol, and that the same effects of depression were produced on both the motor and sensory nerves.

Again, there is scarcely any doubt that in large quantities the effects produced by alcohol on the peripheral nerves are accompanied by alterations in the nerve-tissue itself, and both in the gray and the white substance. In regard to the latter, and particularly in reference to the peripheral nerve-filaments, the results of experimentation show this to be the case. It could not, indeed, be otherwise, judging from the very decided action of the drug. Thus, Jackimoff§ has made, in the laboratory of Merzcfewski, an experimental study of the nervous changes following the action of alcohol. The author divided his research into three series, giving the drug to puppies and dogs in the strength of forty per cent. The alcohol was administered, in the first series, in gradually ascending doses of from 1 to 8 cubic centimetres (16 grains to 2 drachms) for each kilogramme of the animal's weight, until death was produced. In the second series, the author so gave the drug, during the period of a month, as to produce an acute intoxication, which resulted in the death of the animal; while in the

\* *Archiv f. Patholog. Anatom.*, Bd. lxxxiii. S. 243.

† "Therapeutics: Its Principles and Practice," eighth edition, 1891.

‡ *Pflüger's Archiv*, Bd. viii. S. 605, 1874.

§ *Bull. de la Soc. d'Anthropologie de Paris*, tome vii. p. 72, 1890.

third series of experiments an acute drunkenness was caused.

There was observed, resulting from the first series of experiments, a gradual paralysis of the hind legs, preceded by languor, muscular relaxation, accompanied with general hyperæsthesia and tenderness of the nerve-trunks. Death was caused in from five to eight months. No post-mortem lesions were observed in any of the organs, and, singularly enough, nothing abnormal was exhibited by the peripheral nerves under the microscope, while changes in other portions of the nervous system, as will be noticed presently, were distinctly seen. Why changes in the nerves were not observed, as in other parts of the nervous system, is not clearly made out, and can only be explained by some error committed in the microscopical examination. In fact, Jackimoff himself seems to admit this latter issue, since changes in the trophic cells could not occur without producing atrophy of the tributary elementary fibres. When the animals received the drug according to the second method, similar changes, although to a less degree, were observed.

Spaink\* has studied and endeavored to determine the action of ethylic alcohol, when given for a long time, particularly upon the peripheral nerves. He used in his experiments rabbits, and injected the drug, well diluted, by means of an œsophageal sound. Immediately after the death of the animal, the auricular, the tibial, and the pneumogastric nerves were taken out. These the author placed, for hardening purposes, in either Fleming's or Erlich's liquid, some of the nerves being stained by means of various reagents. The investigator was thus able to determine the degeneration of peripheral nerve-fibres, and found an especial modification of the axis-cylinder,—that is, a spiral twisting of this element corresponding, probably, to the direction of the degeneration of the fibre.

*On the Higher Nerve-Centres.*—That alcohol exerts a powerful influence upon the brain and other centres is a well-known fact, and needs neither further experimentation nor discussion. It may be said, nevertheless, that mild doses of the agent produce a primary stimulation of the cerebrum, and thus increase the rapidity, although perhaps not the depth, of thought. Upon the spinal cord, as well as upon the muscles and nerves, alcohol augments the reflex activity. Large amounts cause a loss of co-ordinating power, this being the result of

an action upon the brain and the lower nervous system. Under such circumstances the power of touch is partly destroyed, and it has been found that this loss of co-ordination is mainly due to paralysis of sensory function. Thus, Kraepelin,† in an especial research on the cerebral action of certain medicaments, has found that alcohol in small doses impairs the sensory functions and excites the motor ones; and that, on the other hand, in large amounts the drug first aids the motor processes and finally abolishes them. The loss of co-ordination “makes a drunken man,” as Hare‡ has so tersely expressed it, “fail to recognize the surfaces of obstructions, and the impaired mental power and disordered judgment, combined with the badly-acting motor and sensory pathways, cause him to stumble and fall.”

As in the case of the peripheral nerve-fibres, alcohol produces lesions of the brain, spinal cord, and the corresponding membranes. Jackimoff§ observed that if the constant acute intoxication of the third stage or series of his experiments were persisted in, death took place in from thirty to thirty-two days, and the post-mortem examination disclosed the lesions just mentioned. The microscope revealed great hyperæmia of the gray matter of both brain and spinal cord, extending into the adjacent white substance. It was noticed that in all instances the degeneration was an ascending one, decreasing in severity, however, as it proceeded. The chief lesion was found in the lumbar enlargement of the medulla spinalis.

#### ON THE CIRCULATION.

The influence which alcohol exercises on the circulation is extremely interesting and of the utmost importance. Without putting aside the study of the actions of the drug on other parts of the system, it is my purpose to make a special and thorough investigation of its influence on the circulatory apparatus, from the fact that in this there exists a great deal of contradictory evidence. I will, then, examine the literature of the various observations made so far, and afterwards discuss the results of my own experiments.

Quite recently Gutnikow|| has undertaken a series of experiments on curarized dogs. To these animals, under such conditions, he administered alcohol in ascending doses. The results obtained led the author to the follow-

\* *Journ. de Méd., de Chirurg., et de Pharmacolog. de Bruxelles*, October 5, 1890.

† *Riforma Medica*, July 11, 1892; *British Medical Journal*, August 27, 1892.

‡ “*Practical Therapeutics*,” third edition, 1892.

§ *Loc. cit.*

|| *Zeits. f. Klin. Med.*, Bd. xxi. p. 153, 1892.

ing conclusions: 1, alcohol produces a diminution of the arterial pressure, due to a depression of the vaso-motor centres; 2, the drug enhances the work of the heart; 3, it does not influence the pneumogastric nerve.

In the sphygmographic studies made by Parkes and Wallowicz\* on healthy men, it was found that the pulse was increased in both force and rapidity, but no distinct indications of increased blood-pressure were seen. Zimmerberg† states that alcohol reduces both the rate and force of the pulse, and that after division of the pneumogastric nerves the force and rapidity remain the same, but the arterial pressure is diminished. This author employed toxic doses, his experiments being made on animals. Dogiel,‡ who used small quantities, has observed at first an increase of cardiac rate, followed by a decrease of the same. The pressure was also raised from the beginning, then diminished, accompanied during this stage by a secondary increase of the pulse-rate; and he further noticed that under this latter condition the vaso-motor centres were paralyzed, since they did not respond to stimulation. He believes that the accelerator fibres (?) are stimulated. The author, unfortunately, does not detail his experiments.

Castillo§ obtained similar results in his experiments performed on frogs and rabbits. In these latter animals he found small doses of alcohol to produce a marked increase of the arterial pressure, followed by a distinct fall, especially when the dose of the medicament was augmented. The pulse was likewise increased in rate and force. These phenomena were not prevented by previous section of the vagi, of the accelerator nerves, or of the spinal cord. The author, therefore, concluded that the changes described were due to a direct action of alcohol upon the cardiac viscus. These statements appear to be further corroborated by the results of his experiments made upon the isolated heart of the batrachian.

Martin,|| from the results of an extended series of experiments, arrives at conclusions almost diametrically opposed to those of the investigators above referred to. His research was carried on with a view to ascertain especially the action of alcohol upon the heart of the dog. He isolated the organ by quite a complicated method,—a method invented by himself. The

experimenter used different strengths of alcohol, and found that blood containing one-eighth per cent. of the drug by volume had no immediate action on the isolated heart, that blood containing one-fourth per cent. diminished within one minute the work done by the heart, and that blood containing one-half per cent. of alcohol always diminished the work of the heart at once. It was observed that if the pericardium be cut away, this procedure prevented the action of even one-half per cent. of alcohol. The author ventures to explain this phenomenon by stating that alcohol so relaxes the cardiac muscle that there is no room in the pericardium for a full diastole, the relaxed heart being, even in its systole, about sufficiently large to fill the pericardium.

Hemmeter,¶ employing Martin's method of experimentation, has obtained similar results. He found that the work of the isolated heart of the mammalian is distinctly lessened by alcohol.

The more recent studies of Eagleton\*\* do not confirm the results of Martin and Hemmeter. Eagleton, by a continuous injection of alcohol into the circulation, found that small doses, frequently repeated, increased both cardiac force and arterial pressure; that large amounts at first increased, then diminished, blood-pressure, followed by a partial rise to the normal height, and, finally, by a progressive fall of pressure until the occurrence of death; that at the same time the frequency of the heart's beat is at first decreased, though there is sometimes a primary increase; that the pulse then partly returned to the normal rate and was subsequently decreased. He also found that strong alcohol, in minute quantities, generally increased the cardiac force and the pulse-rate. On the other hand, large amounts of alcohol decreased at once the rate and the force of the cardiac beat, accompanied by a diminution of the blood-pressure. These phenomena were the result of a direct action of the drug upon the heart, since they were observed similarly after the organ had been previously isolated from all nervous connection. Therefore the author concluded that alcohol, in small doses, is a cardiac stimulant; in large amounts, a cardiac depressant.

Eagleton, then, agrees with the observations of most previous experimenters, with the exception of Martin and Hemmeter, and his results sustain the common clinical belief that

\* "Effects of Alcohol on the Human Body."

† Quoted by Wood, *loc. cit.*

‡ *Loc. cit.*

§ *Philadelphia Medical Times*, vol. xi., October, 1880.

|| *Maryland Medical Journal*, p. 289, September, 1883.

¶ *Johns Hopkins Univ. Stud. Biol. Labor.*, p. 225, November, 1889.

\*\* *University Medical Magazine*, September, 1890.



small amounts of alcohol increase the force of the circulation.

Meissner,\* who experimented on mice and rabbits with allylic alcohol, has shown that this substance produces violent irritation of the mucous membranes, accompanied with great dilatation of the blood-vessels and consequent lowering of the arterial pressure. In his experiments death was caused by allylic alcohol through respiratory failure, preceded by dyspnoea and convulsions. Narcosis, however, was not produced by this agent.

An interesting study of the actions of the alcohols belonging to the ethylic and aromatic series has been published by Gibbs and Reichert.† The authors examined propylic, isopropylic, butylic, iso-butylic, heptylic, octylic, allylic, benzylic, and cuminic alcohols. The results of their experiments upon animals show that the actions of these various substances are essentially of the same character, though differing in degree. Ethylic alcohol, which may be taken as a type of the ethyl series, was carefully studied, and its actions on the circulation and the respiration are thus summarized: Small doses increase the frequency and force of the cardiac beat, increase the arterial pressure, and increase the respiratory movements. Large doses generally decrease, but sometimes increase, the pulse-rate, primarily increase and then lower the arterial pressure, and increase the respirations. Very large doses depress the pulse, pressure, and respiration. The changes in the heart-beat are due to direct actions on the heart; the increase of pressure is also due to a direct action on the heart. The decrease of pressure is due to a depression of both the heart and vaso-motor apparatus. The primary increase and final decrease in the respiratory rate are due to a stimulation and subsequent depression of the respiratory centres. The authors are led to believe that the action of the other alcohols is identical with those of ethylic alcohol, the differences being essentially in degree, and increasing with the acquisition of each radicle; in other words, the higher the alcohol in the series the greater its toxic power. The actions of the benzylic and cuminic alcohols, which belong to the aromatic series, are apparently the same as those of the others.

It must be admitted that many observers have seen depressant effects caused by alcohol, even when ingested in small quantities. It will be sufficient for me to mention the

names of Lauder Brunton, Hammond, Hervier and Saint-Layer, Fife, Lehmann, Perrin, Richardson, Smith, and Vierordt, the work of all of whom has been examined and reviewed by MacDowel Cosgrave.‡ In all these studies it is stated that alcohol produces from the first a narcotic rather than a stimulating effect.

The statements made by these latter high authorities deserve certainly serious consideration; yet, I believe, the scale of experimental evidence is inclined towards a stimulation rather than to a narcosis produced by alcohol, especially when moderate amounts of the drug are judiciously used.

I will now examine the results of my own experiments, studying the effects of alcohol on the pulse, both of the isolated heart of the frog and that of the dog, and upon the blood-pressure *seriatim*. The warm-blooded animals used by me in the experiments to be presently described were exclusively dogs.

*On the Heart.—The Pulse.*—I prepared different solutions of alcohol, of the strength of .5, 1, and 2 per cent. respectively. In these solutions I placed the isolated hearts of frogs, and compared their activity with that of others placed in simple solutions of chloride of sodium. For example, two hearts were placed first in the salt solution, and their beats counted. One of the hearts was then taken out carefully and placed in the alcoholic solution, alongside of the other, and their beating carefully observed. I will detail the following experiments:

*Experiment 6.*—In this experiment the hearts were beating at the rate of 48 per minute.

Alcohol Solution, 5 Per Cent.		Chloride of Sodium, Normal.	
Time.	Pulse.	Time.	Pulse.
10.30	58	10.31	48
10.32	60	10.33	48
10.35	64	10.36	48
10.37	62	10.38	46
10.45	60	10.46	44
10.50	50	10.51	43
11.00	48	11.01	40
11.10	22	11.15	38
11.30	14	11.32	36
11.36	8	11.38	26
11.40	Heart stopped in diastole.	11.40	24
		11.50	8
		11.58	Heart stopped.

*Experiment 7.*—The hearts were beating in the salt solution at the rate of 52 per minute.

\* Berlin. Klin. Wochenschrift, No. 33, and Edinburgh Medical Journal, November, 1890.

† American Chemical Journal, No. 6, vol. xiii., 1891.

‡ Dublin Journal of Medical Sciences, September, 1891.

*Alcohol Solution,  
1 Per Cent.*

Time.	Pulse.
11.15	60
11.20	60
11.25	58
11.35	48
11.45	42
11.50	30
11.55	22
12.00	10
12.05	4
12.08	Heart arrested in diastole.

*Chloride of Sodium,  
Normal.*

Time.	Pulse.
11.17	52
11.21	52
11.27	50
11.41	40
11.47	36
11.53	38
11.58	36
12.02	32
12.09	30
12.11	28
12.16	26
12.20	12
12.30	4
12.35	2
12.43	Heart ceased.

*Experiment 8.—**Alcohol Solution,  
2 Per Cent.*

Time.	Pulse.
12.20	56
12.24	58
12.29	50
12.33	48
12.40	40
12.45	30
12.50	15
12.58	4
1.03	Stopped.

*Chloride of Sodium,  
Normal.*

Time.	Pulse.
12.22	58
12.26	58
12.32	56
12.38	56
12.42	52
12.47	52
12.52	52
1.00	48
1.10	36
1.25	20
1.35	8
1.46	Arrested.

In Experiment 6 the pulse was increased 10 beats above the normal within a short time, and thus continued, with slight variations, for a period of twenty-five minutes; the pulse then returned to normal, and was afterwards decreased gradually until the heart was finally arrested in diastole.

The same results, although to a less marked degree, were observed when one- and two-per-cent. solutions of alcohol were used, as in Experiments 7 and 8. In these an increase of 18 and 12 beats per minute, respectively, was also noticed, lasting for about twenty minutes. The pulse then gradually began to decrease until its final cessation, this occurring in about thirty-eight minutes longer. In both experiments the heart continued to act in the salt solution for a longer time (from eighteen to thirty-five minutes), but at no time was there an action above the normal produced.

A very dilute solution of alcohol—say .1 per cent.—has no perceptible action upon the pulse, as is shown in the following record:

*Experiment 9.—**Alcohol Solution,  
1 Per Cent.*

Time.	Pulse.
10.40	62
10.45	60
10.50	58
10.55	52
11.05	40
11.15	32
11.20	8
11.28	Stopped.

*Chloride of Sodium,  
Normal.*

Time.	Pulse.
10.42	66
10.47	66
10.52	64
10.57	60
11.06	58
11.18	50
11.25	16
11.30	16
11.35	12
11.48	Stopped.

It is thus observed that, although very dilute alcohol does not apparently influence the action of the heart of the frog, small amounts do increase the rapidity of the cardiac beat, this phenomenon being eventually followed by a depressant effect. Large doses diminish from the first the pulse-rate.

The same effects—that is, those of stimulation by small doses and of depression by large or toxic quantities—are observed in the heart of the dog. In these instances I have employed the drug in repeated doses, at short intervals or in continued injection, following the method of Eagleton. The agent has been used in the strength varying from twenty to twenty-five per cent. In this manner coagulation of the blood was prevented to a very large extent.

In all these experiments the drug was injected into the general circulation through the external jugular or internal femoral vein, while the carotid or femoral artery was connected with the recording kymograph.

It will be seen from the appended experiments, numbered 10, 11, 13, 14, and 17, that small doses of alcohol increase the rapidity of the pulse. This increase is usually accompanied by a corresponding rise of the arterial pressure. If during the experiment an electrical current is applied to the central or peripheral end of a cut vagus, inhibition of the heart is immediately produced (see Experiment 13), a fact of great significant importance.

I shall now proceed to study how this rapidity of the pulse is brought about. As in the case of normal animals, in curarized dogs small doses of alcohol, ingested at short intervals, cause an increase in cardiac rate. In larger amounts, however, there is sometimes an increase, followed by a decrease; sometimes a diminution from the onset, followed by an increase and then by a decrease; while in either instance the blood-pressure is raised, some-

*Experiment 10.*—Dog; weight, 6.12 kilos. *Normal.*

Time. min. sec.	Dose. c.c.	Pressure. mm.	Pulse per min.	Respiration per min.	Remarks.
0.00	...	150	148	20	Alcohol (25 per cent.) used.
.30	10	150	148	20	Injection begun.
1.00	...	168	164	18	Injection ended.
.45	...	168	160	18	
.53	...	165	166	18	
2.00	...	162	166	18	
.30	15	158	152	18	Injection begun.
.50	...	160	160	15	Injection ended.
3.20	...	166	162	18	
.50	...	162	158	12	Eye reflexes still good.
5.10	...	150	152	16	
.40	20	.....	.....	...	Injection begun.
6.00	...	154	162	18	Injection ended.
8.00	...	158	170	18	
13.00	...	152	166	12	
16.00	...	142	142	14	Dog whines.
20.00	...	150	146	16	Dog struggles.
22.30	...	142	132	12	Quiet again.
25.00	...	125	114	10	Respiration shallow.
32.00	...	118	148	12	
40.00	...	98	86	8	Animal was eventually killed with chloroform.

*Experiment 11.*—Dog; weight, 8.16 kilos. *Normal.*

Time. min. sec.	Dose. c.c.	Pressure. mm.	Pulse per min.	Respiration per min.	Remarks.
0.00	...	175	140	20	Alcohol (25 per cent.) used.
1.30	20	175	142	20	Injection begun.
2.00	...	180	150	20	Injection ended.
.45	...	180	152	20	
3.30	...	180	160	18	
4.30	...	182	160	18	
9.30	25	180	158	16	Injection begun.
10.00	...	182	162	18	Injection ended.
12.30	...	182	.....	16	Dog whines and struggles.
13.30	...	182	164	18	Animal quiet again.
18.30	...	160	138	16	Eye reflexes gone; respiration shallow.
20.00	30	162	142	12	Injection begun.
.30	...	158	132	12	Injection ended.
23.45	...	140	112	16	
28.45	...	112	98	10	Dog snores.
33.00	...	96	82	8	Hind legs rigid; snores deeply.
35.00	...	.....	.....	...	Clot for 8 minutes.
48.00	...	72	68	22	Respiration quite shallow.
50.00	...	65	52	26	Respiration very shallow.
58.00	...	80	112	16	Killed with chloroform.

*Experiment 13.*—Dog; weight, 8.3 kilos. *Normal.*

Time. min. sec.	Dose. c.c.	Pressure. mm.	Pulse per min.	Respiration per min.	Remarks.
0.00	...	132	140	24	Alcohol (20 per cent.) used; continuous injection employed; vagi prepared.
2.00	...	132	140	24	Injection begun.
5.00	...	138	152	22	
8.00	...	142	158	24	
10.00	...	138	166	18	Has had 50 c.c.
12.45	...	128	142	16	
15.00	...	122	142	18	
20.00	...	128	132	18	Has received 155 c.c.
22.30	...	.....	.....	...	Clot for 5 minutes.
28.45	...	130	138	26	Injection begun anew.
32.30	...	124	112	16	Eye reflexes weak; respiration labored.
37.00	...	122	128	12	Has had 235 c.c.
39.45	...	126	136	18	Applied electrical current to vagi; heart inhibited immediately.
40.00	...	52	.....	...	
41.00	...	108	.....	38	
52.00	...	112	124	12	Has had 320 c.c.; snores deeply.
55.00	...	82	96	8	Respiration labored; muscular rigidity of extremities; eye reflexes gone.
58.00	...	.....	.....	...	Died from respiratory failure.

*Experiment 14.*—Dog; weight, 8.9 kilos. *Normal.*

Time. min. sec.	Dose. c.c.	Pressure. mm.	Pulse per min.	Respiration per min.	Remarks.
0.00	...	138	182	32	Alcohol (25 per cent.) used; continuous injection employed; crural nerve prepared. Injection begun.
1.00	...	138	184	32	
3.20	...	142	192	28	
5.30	...	144	198	24	Has had 140 c.c.
8.45	...	128	178	24	
9.30	...	118	168	22	
13.30	...	122	170	16	Has received 225 c.c.
15.00	...	.....	.....	...	Clot for 6 minutes.
22.00	...	.....	166	28	Dog snores; eye reflexes absent.
25.30	...	118	168	18	Has had 260 c.c.
28.00	...	118	162	16	Stimulated crural nerve with electrical current; blood-pressure 122.
32.00	...	118	158	14	Muscular rigidity; respiration difficult; alcohol stopped; had received 325 c.c.
38.00	...	98	112	14	Strong electrical current to sciatic nerve; blood- pressure 106.
46.00	...	.....	.....	...	Animal died from failure of the respiration; heart ceased in diastole.

*Experiment 17.*—Dog; weight, 8.3 kilos. *Curarized.*

Time. min. sec.	Dose. c.c.	Pressure. mm.	Pulse per min.	Respiration per min.	Remarks.
0.00	...	142	165	...	Pure alcohol employed; artificial respiration. Injection begun. Injection ended.
8.30	2	142	168	...	
9.00	...	142	172	...	
11.30	...	144	152	...	Injection begun. Injection ended.
13.45	...	142	176	...	
15.00	...	146	178	...	
16.00	3	138	158	...	
16.30	...	130	158	...	
18.30	...	138	162	...	
21.00	...	136	178	...	
24.00	...	134	170	...	
29.00	...	130	168	...	
32.00	...	130	150	...	
35.45	...	132	144	...	
40.30	...	128	146	...	

*Experiment 18.*—Dog; weight, 12 kilos. *Vagi cut.*

Time. min. sec.	Dose. c.c.	Pressure. mm.	Pulse per min.	Respiration per min.	Remarks.
0.00	...	188	192	12	Tube in trachea; pure alcohol used.
15.00	2	186	192	10	Injection begun. Injection ended. Struggles.
15.30	...	192	194	10	
16.45	...	194	198	...	
18.00	...	200	196	8	Injection begun. Injection ended. Respiration very shallow; eye reflexes weak.
22.00	...	196	192	8	
25.00	...	192	192	6	
28.30	2	192	180	6	
29.00	...	180	186	...	
32.00	...	176	178	6	
36.30	...	168	178	6	
44.00	...	172	182	6	
50.00	...	168	182	6	
58.00	...	162	182	6	Killed with chloroform.

*Experiment 19.—Dog; weight, 8 kilos. Vagi cut.*

Time. min. sec.	Dose. c.c.	Pressure. mm.	Pulse per min.	Respiration per min.	Remarks.
0.00	...	216	182	8	Tube in trachea; alcohol (25 per cent.) used; continuous injection employed.
10.00	...	216	182	8	Injection started.
11.20	...	218	184	8	
13.00	...	210	180	10	Struggles.
16.00	...	200	176	8	Has had 50 c.c.
18.00	...	190	176	6	
23.30	...	182	168	6	Pulse-waves large.
29.00	...	168	138	4	Has received 120 c.c.
32.00	...	.....	.....	...	Clot for 5 minutes.
38.00	...	152	140	4	Started injection again.
39.45	...	140	128	...	Muscular rigidity; eye reflexes gone.
48.00	...	66	132	4	Has had 150 c.c.; stopped injection.
53.00	...	52	.....	4	
55.00	...	40	118	...	Stopped breathing.
58.00	...	40	.....	...	
59.00	...	.....	.....	...	Heart stopped in diastole.

*Experiment 20.—Dog; weight, 13.5 kilos. Cord and vagi cut.*

Time. min. sec.	Dose. c.c.	Pressure. mm.	Pulse per min.	Remarks.
0.00	...	88	178	Cord severed between third and fourth cervical vertebræ; artificial respiration; pure alcohol used.
5.30	2	86	178	Injection begun.
6.00	...	88	182	Injection ended.
7.45	...	92	188	
9.30	...	102	186	
12.45	...	98	180	
15.00	2	98	180	Injection begun.
15.30	...	96	170	Injection ended.
18.00	...	82	158	Pulse-waves large.
22.00	...	90	160	
25.00	2	78	148	Injection begun.
25.30	...	74	140	Injection ended.
28.00	...	48	98	
32.30	...	40	90	
35.00	...	42	98	
39.45	...	30	82	Killed with ether.

*Experiment 21.—Dog; weight, 22 kilos. Vagi and cord severed.*

Time. min. sec.	Dose. c.c.	Pressure. mm.	Pulse per min.	Remarks.
0.00	...	102	206	Cord cut between fourth and fifth cervical vertebræ; artificial respiration; alcohol (25 per cent.) employed; continuous injection.
4.30	...	102	204	Injection begun.
6.45	...	112	224	
8.00	...	114	260	
12.30	...	98	198	Has had 80 c.c.
16.00	...	68	206	
28.00	...	52	206	
30.00	...	52	.....	Pulse irregular; has received 250 c.c.; stopped alcohol.
40.00	...	40	172	Pulse-waves large.
46.00	...	30	98	
48.00	...	30	98	
50.00	...	28	80	
52.00	...	...	...	Animal died.

times remains unaltered, or falls if the dose of the agent be sufficiently toxic. The effects on the arterial pressure in curarized animals I will discuss later.

I find that the same stimulating effect upon the cardiac beat is caused by small doses of alcohol when the pneumogastric nerves have been previously divided, and similarly when the cardiac viscus has been isolated from all nervous connection by previous section of both vagi and of the spinal cord.

An examination of Experiments 18, 19, 20, and 21 will sustain these statements.

A careful examination of all these experiments shows that there are no marked changes in the pulse-rate in connection with the variations of the blood-pressure, except those due to a direct cardiac action. Again, there is, indeed, no evidence to the effect that the vessels themselves are any way altered in size by alcohol. Moreover, the results obtained in the experiments performed on the isolated hearts of frogs point to one and the same evident conclusion.

Alcohol, then, in small amounts, causes an increase in the pulse-rate, not by influencing the cardio-inhibitory apparatus or the vaso-motor system, but mainly by a direct action of the drug upon the heart. These results confirm those obtained especially by Castillo and Eagleton.

Large quantities of alcohol, on the other hand, exercise from the beginning a depressant effect on the rate of the pulse, this phenomenon continuing till the occurrence of death, and it is safe to infer that such an effect is similarly the result of a direct cardiac action.

(To be continued.)

#### THE ANTISEPTIC PROPERTIES OF THE OIL OF CINNAMON.

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SINCE 1869, when Lister announced his antiseptic method, the medical profession has been searching for the best and safest antiseptic.

Many have been launched upon the profession only to be wrecked by the laboratory investigations of the bacteriologist and the clinical test of the surgeon. Bichloride of mercury, while a dangerous antiseptic, has stood the test better than any other which has been introduced; but from its poisonous properties it

cannot be used on surfaces which rapidly absorb fluids, as the peritoneum, or, if used, must be flushed immediately with boiled water.

As the abdomen is the field of a large proportion of surgical operations, this is an unquestionable hinderance; the same may be said of its use in the pleural and brain cavity. Another great disadvantage is its action on the instruments, necessitating their special disinfection.

The antiseptic method introduced at Johns Hopkins Hospital, of oxalic acid and permanganate of potassium, while good, has many disadvantages to the surgeon. The discoloration of the hands is one of these, and, it being a colored fluid, the instruments cannot be placed in it on account of the surgeon not being able to locate them.

As science is always progressive and the field open for investigation, we beg leave to report the results of experiments with another antiseptic, which, while not new, has not yet been thoroughly investigated. It is a well-known fact that the essential oils possess marked antiseptic properties. I have used in my private and hospital practice the Ceylon oil of cinnamon, in the treatment of infective varieties of nasal, laryngeal, and aural affections, with marked success, which led me to believe that the oil possessed antiseptic properties, and this in turn, led to further investigations.\*

The antiseptic properties of this drug have long been known. Even among the laity the water obtained by soaking the bark is known to possess healing properties.

In 1670, Hoechstetterus made mention of the healing properties of the oil. Titus in 1707, Goller in 1709, and Gehler in 1787.

One hundred years later, Chamberland, in the "Annales de l'Institut Pasteur," vol. i. pp. 153-164, reports his observations as to the antiseptic properties of essence of cinnamon, in which he states that "no living germ of disease can resist the antiseptic power of essence of cinnamon for more than a few hours." He claims that it destroys the microbes as effectually, if not as rapidly, as corrosive sublimate.

Championnière, in an article in the *Journal de Médecine et de Chirurgie Pratiques*, June 10, 1893, mentions the antiseptic properties of the oil of cinnamon and recommends its use as a

\* These investigations were carried on in our private laboratory, dating back to October, 1892, from which date to the present Dr. J. Chalmers Da Costa and myself have conducted these experiments both from a practical and theoretical stand-point, and our thanks are due to Mr. John Johnson, surgical clinic nurse in the Jefferson College Hospital, for preparing the solutions.

dressings for wounds. He also claims that the irritating action can be avoided by adding retinol to the solution. When the Ceylon (pure) oil of cinnamon is used, the irritation is reduced to the minimum.

To test its antiseptic properties, pure cultures of different germs were used, the oil of cinnamon being of the strength of 1 to 500. It was found on exposing the cultures, kept at a temperature of from 60° to 98.6° F., that, after from thirty minutes to two hours, inoculations made from these tubes, with few exceptions, showed no growths, even when incubated; the germs of suppuration and erysipelas were destroyed in not less than thirty minutes, while those of tubercle, anthrax, tetanus, and glanders required exposure of at least two hours; typhoid fever less than these, but over one hour. The germ of Asiatic cholera, while markedly resistant, was found to show no growths after from three to five hours.

The hands were first cleansed by means of soap, water, and brush, finger-nails cleaned, and then the hands bathed in the 1 to 500 cinnamon solution. Four tubes were inoculated from the hands,—two from under the nail, and two from the surface of the skin.

From these no growths were obtained; but on repeating the experiment, one tube out of four (inoculated from under the finger-nail) showed a mixed growth, from which the germs of suppuration were isolated.

How oil of cinnamon acts in these vegetable cells, the following theory may explain: The germ being an albuminous compound, composed mainly of nitrogen, oxygen, and hydrogen, and being enclosed in a capsule of varying thickness, the chemical composition of which is cellulose, when brought in contact with the active principle of the oil, the cinnamic acid, has its cell-wall contracted, which practically deprives the germ of its nutrition. By microscopic examination this theory is confirmed.

The results obtained would lead one to the conclusion that this is a germicide, but there is a vast difference between laboratory and clinical antiseptics and germicides.

The germ, when transferred from the tissue to the artificial media of the test-tube, even in the most virulent cases requires several days to accommodate itself to its environments,—its *hygiene*, it might be called.

The solution which will act on this now *laboratory* germ will not always act with such good results when the germ is in its natural •nidus. It is the writer's belief that the drug is an antiseptic which only retards the growth of the germ by its action on the capsule, and

that the germ recovers its activity before the process of healing can take place.

The action of antiseptics and germicides on pure cultures of germs is largely controlled by the generation of the germ, having more effect on those which have reached the fourth or fifth generation. This will often explain the difference in results obtained by different experimenters.

In all the cases where the solution of oil (1 to 500) was put to the clinical test,—those under the care of Dr. Da Costa,—the wounds healed by first intention. In one case in particular, where the incision was at the inner angle of the eye, where the secretions from the lachrymal duct always retard the healing process, the union was uninterrupted. In the cases where it was used in abdominal work the results were not so good, as in three out of four infection occurred; yet, at the same time, in many cases in which the bichloride of mercury was used the same bad results have been obtained. This refers more to the connective tissue and serous membranes, while on mucous membranes clinical experience shows that it possesses marked germicidal properties.

Da Costa, in his article on the treatment of gonorrhoea by hydrogen dioxide and oil of cinnamon, published in the *Medical News*, October 21, 1893, shows what good results he obtained, while the writer has used it for over two years in the treatment of various nasal, laryngeal, and aural diseases with success. The conclusions, then, to be made from the laboratory and clinical investigations are, that the oil of cinnamon is not a safe antiseptic for surgical work, but that it is a good mucous membrané antiseptic, and, contrary to the conclusions of Chamberland and Black, I do not believe it to be a germicide.

1632 CHESTNUT STREET, PHILADELPHIA.

**ENORMOUS OVAL HEMORRHOID ENCIR-  
CLING THE ANUS; WHITEHEAD'S  
OPERATION; ENTIRE CURE.**

READ BEFORE THE SECTION ON SURGERY OF THE COLLEGE  
OF PHYSICIANS OF PHILADELPHIA, MARCH 8, 1894.

By W. W. KEEN, M.D.,

Professor of the Principles of Surgery and of Clinical Surgery in  
the Jefferson Medical College.

REV. DR. E., aged sixty, was brought to me at the Jefferson Hospital by Dr. J. T. Rugh, December 4, 1893. There is marked tuberculosis and insanity in the family; he had enteric fever in youth and several attacks of dysentery; has always been markedly constipated. He has had trouble with hemorrhoids and prolapse of

the rectum for about thirty years. For the last twenty years it has been a serious disability, and for the last two years it has practically prevented his doing any work in his profession, or, in fact, work of any kind whatever. He has scarcely begun his service in the pulpit before protrusion of the mucous membrane and the hemorrhoids takes place, and his discomfort is so great that he is unable to preach. Seven years ago he consulted the late Dr. Agnew, who advised him, in view of the severity of his condition, not to have any operation done. He has lost large amounts of blood of late, and never has a stool without the protrusion.

*Status Præsens.*—A well-nourished, large, heavy man. On examining the anus, it resembles more than anything else a large, swollen vulva after delivery (Fig. 1). It measures four inches long by three inches wide, the outer margin being one enormous, oval hemorrhoid about an inch and a quarter in diameter and surrounding the anal aperture as though it were a great oval piece of rope. The aperture of the oval is filled with the prolapsed and ulcerated mucous membrane.

*Operation, December 9, 1893.*—I began the operation posteriorly by an incision, which finally encircled the entire anus, at about the middle of this marginal hemorrhoid. In doing so it was very curious to notice how the fibrous tissues, being put on the stretch, were divided, but the softer, dilated hemorrhoidal veins yielded before the sharp knife without being cut; the moment that there was an aperture, the dilated veins would form herniæ of large size between the fibres.

I first went directly towards the anal aperture until I recognized the sphincter muscle; then by a blunt dissection of the tissues I reached the mucous membrane on the inner border of the sphincter. Following this, two fingers were inserted into the calibre of the rectum, and the pile-bearing area seized between the thumb and palm. The moment I recognized the mucous membrane at one point, from that as a point of departure I proceeded with the blunt dissection, all the way around, with but little trouble. Only three ligatures were required, and the amount of blood lost was moderate,—nothing whatever of a severe character. The operation, which had looked most formidable before it was begun, was quickly performed with comparative facility. The whole pile-bearing area was cut away, step by step, and the mucous membrane stitched to the skin *pari passu* with the cutting. When the operation was finished the anus was little more than its normal size.

After the operation the patient reacted well, without nausea. The wound was dressed with careful antiseptic precautions. His highest temperature was 101° F., which was only reached once, on the third day, and again on the eighth day, in consequence of constipation. With these exceptions, the temperature ran from 98.5° to 100° F. He was perfectly comfortable almost from the moment when the operation was completed. On the third day his bowels were opened by an enema of sweet oil and citrate of magnesia by the mouth. He had but little control of the sphincter muscle. On the eighth day the stitches, which had begun to cut out, were removed. Union by first intention took place, excepting at two small points, where the mucous membrane and skin gaped a little. He was out of bed in two weeks, and went home in three weeks, perfectly comfortable. The gaping points were not quite healed. He was directed for a year to keep the bowels in a soluble condition by means of enemata and laxatives, and whenever possible to have his bowels evacuated in a bed-pan in the recumbent position. His control over the sphincter had returned almost entirely by the time that he left the hospital.

*Remarks.*—The case is quite exceptional, in my experience. I have never before seen such an enormous pile encircling the anus,—four inches long and three wide. I confess that when I first saw him I was not a little in doubt as to what ought to be done. The result has shown that the Whitehead operation was not only the best thing to do, but I think the only thing.

Since he left the hospital I have heard from him repeatedly and always with the most favorable report. Since the middle of January he has preached every Sunday, sometimes three sermons in a day, has done pastoral work, travelling as much as twenty miles, and at home splits kindling-wood, carries coal, shovels snow, and can walk several miles without any fatigue. The result leaves nothing to be desired.

#### BISMUTH SUBGALLATE (DERMATOL) IN DERMATOLOGY.

By J. ABBOTT CANTRELL, M.D.,  
Professor of Diseases of the Skin in the Philadelphia Polyclinic  
and College for Graduates in Medicine; Dermatologist  
to the Philadelphia Hospital and to the St.  
Agnes Hospital, Philadelphia.

IT is said that the drug dermatol, a proprietary preparation, has been known for many years under the name subgallate of bismuth. It was first made known by Heinz and Liebreich (*Berlin. Klin. Wochenschr.*, 1891, No. 24,



p. 584), who state that it is a saffron-yellow, very fine powder, that it does not absorb water, and does not change in light or air; it looks like iodoform, but has this advantage over the latter, that it is odorless; it acts as an energetic, dry antiseptic; it is insoluble in most liquids; its antibacterial qualities are only exercised by direct contact, as, for instance, by its thorough admixture with the nutritive soil; this drying property, which is really an astringent quality, causes it to be particularly useful in the cure of wounds and ulcers.

Heinz (*Berlin. Klin. Wochenschr.*, 1891, No. 27) suggests that in excoriations, intertrigo, and slightly moist eczemas, this drug, mixed with an indifferent powder, is of use; for instance, bismuth subgallate, 20 parts; pulvis talcum, 70 parts; amyli, 10 parts. Over small abrasions or wounds a ten-per-cent. emulsion with collodium may be used. In extensive ulcers and so forth one of the following ointments is of use: No. 1. Bismuth subgallate, 10 to 20 parts; petrolatum, 90 to 80 parts. No. 2. Bismuth subgallate, 10 parts; lanolin, 80 parts; vaseline, 10 parts. According to these conclusions, Heinz states that the drug is not indicated in torpid ulcers (chronic ulcers of the leg), where a stimulating treatment is indicated. The writer also suggests a gauze of ten-per-cent. strength.

Heinz and Liebreich have used it with success in one hundred cases, made up of burns, eczemas, ulcers, and affections of the eye, ear, and nose, without producing any poisonous or irritating effect. They state that it favors the growth of granulations, and consequently the process of cure; also that while iodoform brings on secretion, the subgallate of bismuth hinders its formation.

Rosenthal (*Berlin. Klin. Wochenschr.*, 1891, p. 728) confirms the results of Heinz and Liebreich, but instead of the formula (bismuth subgallate, 10 parts; lanolin, 20 parts; vaseline, 70 parts) given by them, he prescribes the following ointment: Bismuth subgallate, 2 parts; pulvis zinci oxidi, 2 parts; petrolatum, 20 parts. He also suggests a paste of two or three per cent., which may take the place of the salicylic-acid paste, because, while irritating less, it has a more drying effect. It is composed as follows: Bismuth subgallate, 2 parts; pulvis zinci oxidi, 24 parts; amyli, 24 parts; petrolatum, 50 parts. Employed in this way, it is useful in some cases of eczema.

Rosenthal (Berlin Dermatological Society, July 7, 1891, and *Monatshefte*, vol. xiii. p. 209, 1891) investigated the antiseptic properties

against the *Staphylococcus pyogenes albus* and other bacteria, and found it to be almost useless, excepting in large quantities, and in this respect it is very much like aristol. The writer (Rosenthal) is rather doubtful as to its permanent value in eczema, but as a dressing after the opening of furuncles it acts favorably.

The general opinion of dermatologists at the meeting at which the paper of Rosenthal was read was, that the drug resembled very much the subnitrate of bismuth in most therapeutic properties, but that it has a little more action.

A. Bluhn (*Therapeutische Monatshefte*, Berlin, 1891), who also investigated its effect upon bacteria, has found it active against the following micro-organisms: *Staphylococcus pyogenes albus*, *Staphylococcus pyogenes aureus*, and a number of others.

In all cases the drug prevented the growth of the micro-organisms, and in some it destroyed them.

Clinically, he found the drug useful in eight cases of ulcer cruris, producing satisfactory results in all of them. In one case it replaced iodoform, which was not well borne; also one case of carbuncle was healed.

Sachur (*Berlin. Klin. Wochenschr.*, 1891) says that bismuth subgallate, used in the treatment of ulcers, keeps the parts free from the eczema that is so often produced by irritating discharges, and that it is the best remedy in non-syphilitic leg ulcers.

Doernberger (*Therapeutische Monatshefte*, 1891) found it useful in moist and impetiginous eczemas of children. It was not, however, effectual in preventing the development of papular eczema. Abscesses, first incised and then treated with the powder, healed rapidly. He recommends it used in the form of ointment of ten per cent. with vaseline or a ten-per-cent. gauze.

Guirard and Cadeac (*Lyon Medical*, Lyons, May 8, 1891) find it to give good results in the humid eczemas which, in the dog, are generally of a rebellious nature, and upon which it exercised a desiccant and astringent action.

Asch, of Breslau (*Provincial Medical Journal*, Leicester, England, April 1, 1891), found that in cases of eczema caused by or occurring during the use of certain antiseptic dressings it acted quite efficaciously.

Azua, of Madrid (*Revista de Medicina y cirugía practicas*, Madrid, March 7, 1891), says that it dries bleeding surfaces and stimulates granulations, and is particularly useful in skin-diseases characterized by much discharge,

although he was unable to confirm its antiseptic properties.

Weismüller (*Berlin. Klin. Wochenschr.*, 1891, p. 1201) has used it in seven cases of leg ulcer without beneficial results. He has also found unpleasant symptoms in a like number after the use of it by external applications, as follows: In one case thirty grammes had been used during twelve days as a dusting-powder for an ulcer of the foot, when vertigo and severe itching ensued; in another case an itching eruption broke out over the whole body; five other cases were similarly affected after the use of the drug.

Glaeser (*Berlin. Klin. Wochenschr.*, 1892, No. 24) says that the cause of poisoning can be explained, because arsenic formed a portion of the powder used. Glaeser, in an extensive experience with the drug in the last year and a half, noticed in one case icterus and diarrhoea in another, but both got well, although the drug was continued. Glaeser considers it perfectly harmless.

H. Isaac (*Deutsche Med. Wochenschr.*, No. 25) recommends it in intertrigo of all kinds, especially in that kind caused by perspiration around the anus and mammæ. In fissures of the nipple, Isaac uses a two-per-cent. solution of nitrate of silver as a caustic, and subsequently bismuth subgallate. In acute moist eczema the powder often causes quick cure. In dermatitis caused by antiseptics like iodoform and mercury bichloride it cures quickly. In abrasions and fissures it seems to promote the formation of epidermis.

Werther (*Deutsche Med. Wochenschr.*) considers that the drug never acts injuriously to the skin or to the general system. He thinks it better than iodoform, because it has no toxic effect. Werther praises it for its astringent and antiseptic effect, as also for its freedom from odor and poisonous effect.

Stierlin (*Correspondenzblatt für Schweizer Aerzte*, Basel, November 7, and *Provincial Medical Journal*, Leicester, England, 1892) summarizes as follows: 1. It is perfectly free from any toxic properties. 2. It never gives rise to eczema or any other signs of local irritation, such as are frequently caused by iodoform. On the contrary, powdering with the bismuth subgallate affords the best means for speedily curing the iodoform exanthemata. 3. It powerfully absorbs wound secretions, and proves exceedingly useful in all cases where astringents and drying are desirable. Thus, it is good in small-sized, non-septic wounds which are more or less shallow. It acts well in burns and scalds of the second

degree. Blisters should be opened and dusted with the dry powder directly to the raw surface. 4. Cotton-wool should not be placed directly over it, because it may stick to the dressing and be removed with difficulty. 5. It should never be used in infectious suppurating wounds (furuncles, etc.), since its application may lead to dangerous retention and accumulation of pus under the crust thus formed. 6. It is useful in large crural ulcers, in moist eczema, and intertrigo. 7. In tubercular ulcers and fistulæ it is inferior to iodoform; it does not possess the antibacterial action of the iodoform. 8. Its antiseptic properties are weak; it is limited to drying tissues, and thus depriving bacteria of a suitable medium for their development.

A. Schmitt (*Revue Médicale de l'Est*, Nancy, France, March 15, 1892) and Schtschegolow (*Chirurgilcheskij Westnik*, St. Petersburg, October and November, 1892) also accord insignificant antiseptic properties to the drug. It is inferior to iodoform in this particular.

Fischer (*Druggist's Circular*, August, 1892) says that it can be made as follows: Bismuth subnitrate, 15 grains, dissolved in 30 parts of glacial acetic acid; 200 or 250 parts of water are added, and then the mixture filtered. To this mixture is added, with constant stirring, a warm solution of 5 parts of gallic acid in 200 or 250 parts of water. An insoluble precipitate is formed, which is first to be washed by decantation and then filtered until the washings give no trace of nitric acid. This is then to be dried at 100° C. (212° F.), and the powder thus prepared should be insoluble in alcohol, showing the absence of gallic acid, and should show the presence of not less than fifty-five per cent. of bismuth oxide, the theoretical amount in the compound being 36.66 per cent.

C. A. Power (*New York Medical Journal*, August, 1892) says that it is odorless, non-irritating, and non-poisonous. It is said to give good service in pemphigus and herpes zoster.

A. K. Stone (*Boston Medical and Surgical Journal*, September 1, 1892) says that it has active powers of hindering the growth of bacteria, but that it is not bactericidal.

P. Grossman (*Omaha Clinic*, October, 1892) uses it with an equal quantity of castor oil in sore nipples. As the drug is not toxic, it is not necessary that the breast be thoroughly cleansed before the child receives its nourishment.

Allen (*Medical Record*, No. 42) says that the drug is insoluble, non-toxic, and non-irritating to the skin. A two-per-cent. ointment cures

burns of the second degree; a plaster will prevent the pits of small-pox.

Wicke (*Intern. Klin. Rundschau*, 1893, No. 5) has observed that the drug, mixed with nitrate of silver, acts as a caustic on open wounds without giving pain. (If this be so, it is an unfortunate thing that the writer did not give the quantities used.)

Mattheus (*Therap. Monatsch.*, 1893, No. 8) has observed, after using the subgallate of bismuth in certain ulcers of the leg, a severe inflammation of the surrounding skin appearing at the end of the first or beginning of the second week. The affected part was red, hot, and exuded a serous, watery fluid.

The clinical experience of the present writer is not as extensive as some of those cited above, yet it is sufficient to base conclusions on, as the following cases will show:

*Intertrigo*.—Of contiguous portions. Three cases dusted with the following powder: Bismuth subgallate, 15 grains; pulvis amyli,  $\frac{1}{2}$  ounce. Patients returned on the following day, and it was found that the parts were somewhat more inflamed. The treatment was changed in all three cases to dustings of lycopodium powder, and patients were decidedly relieved.

*Ecsema Vesiculosum*.—Dorsal surface of fingers of both hands.

March 9.—Bismuth subgallate, 10 grains; petrolatum,  $\frac{1}{2}$  ounce; which was to be applied twice daily and bandaged.

March 12.—Patient returned, saying that the unguent had irritated the parts so much that he discontinued it after applying it twice (in twenty-four hours), and that the parts became swollen to almost double their natural size, discharged freely, while the cloths stuck to the denuded surface. To-day the parts are red, hot, and still discharging some serous fluid; the parts at points are denuded of epidermis, looking as though it had been acted on with a caustic.

*Ecsema Seborrhoicum*.—Patch (two inches square) over the nucha.

February 19.—Bismuth subgallate, 15 grains; vaseline, 2 drachms.

February 24.—Marked improvement; decidedly better.

*Ecsema Fissum*.—Back of hands.

February 9.—Bismuth subgallate, 15 grains; acidi borici, 1 drachm; ungt. diachylon,  $\frac{1}{2}$  ounce.

March 2.—Proved entirely too stimulating.

*Ecsema Squamosum*.—Boy, aged seven years; disease confined to both forearms; has lasted six months.

February 27.—Bismuth subgallate, 10 grains; vaseline, 4 drachms.

March 3.—Improved.

March 6.—Improved very much.

*Ecsema Rubrum*.—Of both legs; man, aged fifty-five; duration, three weeks.

March 5.—The same treatment as in the former case.

March 7.—Very much better; no itching at the present visit.

March 9.—Almost well.

*Ecsema Rubrum*.—Over the nates in a boy of four years of age; has lasted about one month.

March 8.—The same treatment as in the former cases.

March 12.—Very much better.

*Ecsema Rubrum*.—Man seventy years of age; disease confined to both legs for the last ten years; very much over the legs from the ankle to the knees; not moist.

February 8.—Treatment as in the foregoing cases.

March 14.—No improvement whatsoever; treatment changed.

*Ecsema Papulosum*.—Surrounding both wrists; lesions numerous, of two years' duration; has been under treatment in the clinic for some time, when, on the 6th of March, the treatment was changed to the following: Bismuth subgallate, 15 grains; petrolatum,  $\frac{1}{2}$  ounce.

March 11.—Patient returned to-day almost well.

*Ecsema Seborrhoicum*.—Covering the back from the shoulders to the buttocks, of ten days' duration, in a man of thirty years.

March 4.—Bismuth subgallate, 15 grains; petrolatum,  $\frac{1}{2}$  ounce.

March 14.—Man returned almost well.

*Ecsema Vesiculosum*.—Child four months of age; lesions have existed since birth; cover the right side of face.

February 19.—Bismuth subgallate, 5 grains; petrolatum, 4 drachms.

March 1.—Child somewhat improved; did not return after this date.

*Ecsema Vesiculosum*.—Of the face, just in front of the ear; lesion covered with a crust; very itchy.

February 19.—After removing the crust, the same treatment as in the former case.

February 28.—No improvement.

March 8.—The condition remains the same as at the first visit.

March 14.—The drug not proving serviceable, it was changed.

*Ecsema Rubrum*.—In a child of two years,

in whom the eruption had existed since birth; the disease was confined to the cheeks.

*March 6.*—Bismuth subgallate, 10 grains; vaseline, 4 drachms.

*March 10.*—Child very much better; in fact, almost well.

*March 14.*—Progressing as well as at the previous visit.

*Ulcer of Leg.*—Two cases,—one in a man of sixty years, the other in a woman of forty-five years; both found upon the leg, below and around the ankle; due to the varicose condition of the veins, each having some eczema surrounding the ulcer. Treatment as in the foregoing cases for the eczema, and the ulcer dusted with bismuth subgallate,  $\frac{1}{2}$  drachm; pulvis amyli,  $3\frac{1}{2}$  drachms. This treatment was carried out for two weeks without the slightest change in the ulcer, although the eczema was cured.

*Ulcer of Leg.*—In a man of fifty years and of four months' duration, being situated upon the outer side of the right ankle; decided varicosity of the veins in this region; slight eczema surrounding the ulcer.

*February 24.*—Bismuth subgallate,  $\frac{1}{2}$  drachm; pulvis amyli, 4 drachms; this to be applied to the ulcer twice during the day.

*February 25.*—Patient returned with the parts swollen, cedematous, and very painful, and were exuding great quantities of a serous fluid; the eczema was much worse, having spread to a much greater extent.

As we are often requested to give our professional views upon drugs of this class, and as I find that my experience is somewhat different from some of the reports of others, I have deemed it wise to give in detail all that has occurred while I have been using it. As the drug is inferior to others of the class to which it is claimed it belongs, I would willingly lay it aside now that I have found its defects, as the following summary will disclose:

#### SUMMARY.

1. The drug may not be toxic. I did not investigate this property, as I had occasion to use it externally only.

2. It is not superior to other iodoform substitutes, such as iodol and aristol.

3. It does not hinder discharge; on the contrary, it increases it.

4. It is decidedly irritating, as the foregoing facts will show.

5. It is a stimulant rather than an astringent; in fact, it acted almost as a caustic in one or two cases.

6. It cannot take the place that has been allotted to it.

7. I think we have more promising remedies.

#### ALCOHOLISM: THE TREATMENT AND CURE OF THE DISEASE.

BY CYRUS F. TAYLOR, M.D., PUEBLO, COLORADO.

THERE has been so much written and said upon this subject within the last three years that I fear an article from me at this time will prove uninteresting; but so much that has been written, it seems, has been theoretical instead of practical, that I am prompted to this communication.

That alcoholism is a disease, or that there is a diseased condition of the stomach, intestinal tract, circulatory system, brain, nervous system, etc., there is no longer any doubt, especially after the long and continuous or excessive use of liquor.

I recognize and have found it convenient to divide the disease into three classes,—viz., acquired, hysterical, and hereditary. In my opinion, there is a vast difference in these three forms, and some may question my authority for this classification, which I wish to say is based upon practice rather than theory. In this article I will give only one general outline of treatment, which can be varied to suit the class.

After having made a special study of alcoholism for more than two years, and having treated over two hundred cases myself, and about one hundred more having been treated under my instructions by Dr. W. H. Baker, I feel that perhaps the results of my experience may be of some use to the profession at large.

Ninety-five per cent. of such patients treated by us have been cured, and have remained so for a length of time varying from two years to the present.

The patient should be thoroughly examined; an examination of the urine should be made, and in all cases the condition of the heart and lungs should be observed carefully, and everything pertaining to the patient's past life and habits should be ascertained and noted before beginning treatment.

If the patient has been a constant drinker for years and is beginning treatment after a big "spree," the treatment should consist of strychnina nitratis, administered hypodermically four times a day at regular intervals,  $\frac{1}{100}$  grain, gradually increased to  $\frac{1}{80}$  grain, per dose, or until some marked physiological symptom, as twitching of the muscles or chilliness, is com-

plained of, when the dose should be decreased for a day or two, according to symptoms, or according to the patient's ability to stand large doses, or the need of large doses. I have found that patients suffering from alcoholism will stand about  $\frac{1}{10}$  grain three or four times a day for thirty or more days with no ill effects, as I have never observed any alarming symptoms from this part of the treatment, and that old inebriates begin to have an appetite for an early breakfast, and mend generally, within four or five days from the commencement of the treatment. To those acquainted with the action of strychnine upon the system the reason is obvious. Along with this and at the same time I give atropine sulphate, from  $\frac{1}{100}$  to  $\frac{1}{80}$  grain per dose, until marked physiological symptoms are produced. The atropine can rarely be continued over one week, sometimes not longer than three or four days, and in certain cases cannot be used at all, owing to the peculiar action of the drug upon the nervous system and stomach. One must be very careful not to use too much or for too long a time, and at the same time must thoroughly understand his patient and give enough and long enough.

It is better to discontinue the atropine early than to push it, for it can be easily taken up again at any time should the patient require it, and one not thoroughly versed in this part of the treatment should be careful lest alarming symptoms arise. However, I generally begin to decrease the dose of the atropine when the characteristic symptoms appear well marked, and not until then. I usually wait for the dryness of the throat and nose and that peculiar sick feeling at the stomach which old toppers call "squeamishness," the dry and suffused eyes, and the dilation of the pupil to such an extent that one cannot read ordinary print without the aid of glasses, and in exceptional cases not until marked head symptoms appear. I also give digitalis in most cases. That it is an excellent remedy to give with the two former I know from personal experience, and had I been aware of it sooner I might have been saved several nights' sleep. I also give a tonic in these cases. This is usually put up to suit the special case, but an excellent tonic is composed of the following: ext. cinchonæ fld., ammonii muriatis, and some preparation of digitalis or lily of the valley, although it is much better to use a tonic adapted to the particular case at hand, for a patient suffering from alcoholism is generally a sufferer from troubles of the nervous system, stomach, and kidneys, hence the necessity of a preparation which is fresh and suitable to the particular subject.

The hypodermic treatment above spoken of is usually continued about one week, when the atropine can generally be dispensed with, but the other two remedies should be continued a week or ten days longer before any further change is made, except as occasion demands. At this time I generally drop one dose of the strychnine and substitute for it the chloride of gold and sodium, beginning with about  $\frac{1}{10}$  grain and gradually increasing to  $\frac{1}{10}$  grain hypodermically. I also add gold to the tonic at about the same time, in suitable doses; but as the patient is taking tonic every two hours while awake, or about eight doses per day, one must be careful and not overdose with the gold, for by so doing he will produce irritation of the stomach, bowels, and bladder, a condition which must be avoided in these cases, if possible.

The chloride of gold and sodium I consider a very useful adjuvant in this treatment, especially in venereal patients; also in patients with a constitutional or hereditary predisposition, as well as in those who have drunk constantly for years. I know that the profession at large have but little faith in the preparations of gold; but having used them for several years,—constantly for over two years,—I am satisfied as to the benefit to be derived from them, especially in the class of patients here mentioned. I have also used the gold preparations in various other diseases with success, which I may report later. In the preparation of remedies to be given hypodermically, care must be taken, lest they prove irritating and result in a sore arm that will be annoying to the physician and a hindrance to the patient.

I also generally give a good physic early in the treatment, as the atropine frequently causes a dryness of the intestinal tract at first, which, if not overcome by an active cathartic, results in the bowels becoming blocked and plugged, thereby hindering treatment. Our patient during this time is given all the whiskey he wants and as long as he wants, provided he can be trusted or has friends who will take care of him and see that nothing out of the ordinary befalls. But just here let me add that the time that the patient will drink the whiskey is usually short, ranging from three to ten days. I generally give for a resting powder at night, or for any headache that may arise, a powder composed of phenacetin and salol, in doses to suit the case, varying from 5 to 15 grains of each, repeated as often as necessary. Should the patient have delirium tremens to begin with, or should delirium develop, I hardly ever begin the treatment at once, but prefer to wait until the activity of the delirium has somewhat subsided,

and give, instead of the regular treatment, hyoscine hydrobromate hypodermically in doses to procure sleep, or should the hyoscine fail, as it does sometimes, I use the valuable remedy chloral hydrate, usually in large doses. The amount can generally be determined after one or two doses have been given. I hardly ever use any of the opiates, as I do not like their action either before, during, or after the regular treatment. The balance of the treatment during the delirium should be supporting, consisting of beef-tea and extracts, celery, cocoa, etc., also whiskey. I have treated patients with and without whiskey, and am fully satisfied that its moderate use is beneficial in the delirium of these cases. The circulatory system, and especially the heart's action, should never be lost sight of during the delirium. If at any time the pulse should become weak and irregular or thready, use hypodermically digitalis, spiritus ammonii aromatici, or nitro-glycerin. Do not wait for the medicine to act through the stomach, for time is a great factor in these cases, and by assisting the circulation and heart's action a person may be saved to life and usefulness. I am much in favor of the aromatic spirits of ammonia, and many times use it in cases in which I have reason to expect delirium, or where it is already developed, and have learned by experience that it is one of the safest remedies; but as its peculiar action in sobering is well known to most physicians, I need not mention it further in this connection.

It is probably well to add here a word of caution in regard to the use of needles in patients with a venereal history or in those of a strumous diathesis. In such cases always sterilize your needle before using on other patients, or, better still, have a separate needle for such patients. One must treat alcoholism as a disease, and must use as much caution and judgment in the management of the case at hand as would be expected or required in the treatment of any other case. Such being the fact, how can one prepare remedies on the wholesale plan, and trust them to physicians who know nothing of the constituents of said remedies, without being guilty of gross negligence? Such a plan is neither practical nor scientific. I believe that a majority of the cases of alcoholism can be cured by the treatment above given, if conducted carefully and each individual case be studied thoroughly from beginning to end by a competent physician.

I would advise any one suffering from alcoholism, and desiring to be cured, to place himself under the care and attention of one who knows what he is giving, what to expect from

his treatment, and how to avoid any bad symptoms from overdosage. If all cases of alcoholism can be treated out of the same bottle, and the same dose given each patient, without any special study of that patient's condition, or without any regard to the number of years the patient has drunk, or the amount he has drunk, and regardless of the injury done such patient, then alcoholism is a habit rather than a disease, and does not require the need of a physician, for the faith cure would work equally well. The length of time required for treatment depends upon the condition of the patient just as much in alcoholism as in any other diseased condition or disease. How can one treat a number of chronic diseases in a certain stipulated time and cure them all? It is a well-known fact that he cannot do it.

The hypodermic part of this treatment should continue for from three to six weeks in ordinary cases, and if your patient can be kept in sight for several weeks longer, so much the better. The patient, on quitting the regular treatment, should be supplied with tonic or medicine sufficient for two or three weeks. This tonic will keep the system in a normal condition, and make it that much easier for him to resist the alcohol. The patient's associates, mode of life, work, exercise, etc., should all be looked after, and he should be advised as much in regard to them as to his medicine.

#### FERRATIN.

BANHOLZER, of Professor Eichhorst's clinic, relates (*Centralbl. f. Inn. Med.*, January 27, 1894) his clinical investigations with this preparation introduced by Schmiedeberg (*Epitome*, December 2, 1893, par. 461). In the cases in question the amount of hæmoglobin in most instances and the number of red cells were estimated. In anæmia following acute disease, the hæmoglobin was quickly increased (over five per cent. in eight days), as also the number of red cells. In chlorosis the same results were visible even in a more marked degree. The general condition was improved and the increase in weight in most cases considerable. The good effects on the appetite were obvious. When compared with Bland's pills, which also give good results, ferratin was found to lead to a greater increase in the hæmoglobin. The results of these investigations are set forth in tabular form. The author concludes that ferratin is a prompt, useful, and harmless remedy in chlorosis and anæmia following past disease, and is well deserving of further trial.—*British Medical Journal*, February 17, 1894.

# The Therapeutic Gazette

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## Leading Articles.

### PERMANGANATE OF POTASSIUM FOR MORPHINE-POISONING.

IN the last number of the THERAPEUTIC GAZETTE we called attention to the experiments made by Moor, of New York, as to the antidotal power of permanganate of potassium in poisoning by morphine or any of its salts. Since then various contributors to different journals have pointed out a fact of which we were well aware at the time our leading article was written,—namely, that experiments upon the lower animals with morphine were valueless, so far as antidotes were concerned, unless the doses of morphine given were exceedingly large, it being a well-known fact to all who have worked in a physiological laboratory that dogs in particular require enormous doses—many grains of morphine—to seriously affect them. There is, therefore,

this possibility of fallacy underlying the experiments of Dr. Moor. On the other hand, it is to be remembered that the human being is far more susceptible to morphine, and that Moor took himself sufficiently large doses to produce death in the ordinary individual unless an antidote followed the ingestion of the drug. The possible fallacy in this respect might be that the human being who took morphine was able to bear large doses of it because he had accustomed his system to the drug, either by habit or through necessity. Attention is called to these facts by Dr. Andrews, of Montgomery, Ala., in the *Medical Record* of March 10, in which he showed that if only 4 to 6 grains of morphine were given to a dog, recovery nearly always took place, even if no antidote was given, a fact already well known. While these criticisms tend to throw discredit upon the employment of permanganate of potassium for this purpose, it should be remembered, on the other hand, that chemists have known for years that the vegetable alkaloids were readily decomposed by powerful oxidizing agents, and we have ourselves repeatedly produced disorganization of morphine and similar substances by the addition of permanganate of potassium to this solution in a test-tube. It is also interesting to note that in the Philadelphia College of Pharmacy permanganate of potassium has been taught to be an antidote of power in all forms of alkaloidal poisoning, more particularly that of morphine. The profession, therefore, still stands ready to accept as of value or throw aside as valueless the studies to which we have called attention, and appreciates the fact that permanganate only acts as an antidote when it can attack the alkaloid in the stomach, and not after it is absorbed. Under the latter circumstances the physiological antidotes—strong black coffee and strychnine—are to be used.

### THE TREATMENT OF HEADACHES WHICH FAIL TO YIELD TO COAL-TAR PRODUCTS.

TEN years ago, before the large number of pain-relieving drugs of the coal-tar group had been introduced into medicine, opium and Indian hemp were our most reliable drugs for the relief of pain in the head. While cannabis indica suffered temporary disuse through the very wide employment of antipyrin and its relatives, there is no doubt that there still remain a number of cases which are benefited by it and in which the coal-tar products fail. Indeed, it is

doubtful whether these substances are ever as efficacious in the treatment of true migraine or megrim as is cannabis indica, particularly if at the time of the attack the cannabis indica is combined with full doses of gelsemium. Under these circumstances the best results seem to follow the administration of tincture of cannabis indica in the dose of 5 drops three times a day during the intervals between the attacks, and at the time of the attack to administer from 20 to 30 drops of the tincture, or 5 to 20 drops of the fluid extract of hemp, with 10 to 20 drops of the tincture of gelsemium as soon as the first dimming of vision or other prodromal sign of the attack manifests itself. Naturally, so full a dose of a good preparation of gelsemium very markedly reduces the pulse-force, and many patients who take these doses are forced to lie quiet on their backs in bed or on a sofa until the struggle between the drug and the attack of migraine is over. It is true that much disappointment has existed when cannabis indica has been administered, and that many of the profession have cast it aside, being unable to obtain a pharmaceutical preparation of it which would be therapeutically active. We have used the preparation made by Parke, Davis & Co. for nearly ten years with constantly good results.

A word of caution in regard to the employment of the tincture of gelsemium is also necessary. In those cases which already have a feeble circulation the full doses named are contraindicated, and we understand that in some of the southwestern portions of the United States a concentrated tincture of gelsemium is frequently dispensed, the dose of which is 1 or 2 minims at the most. Of course we refer in this article to the tincture of gelsemium which is official in the United States Pharmacopœia.

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*THE USE OF PERMANGANATE OF POTASSIUM AND BINOXIDE OF MANGANESE IN THE TREATMENT OF AMENORRHOEA.*

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PRACTITIONERS of experience always recognize the necessity of treating the amenorrhœa of anæmic women with iron and other drugs which are supposed to increase the richness of the blood, and in many instances they address their efforts not only to the condition of the blood itself, but to the atonic state of the general system and of the generative organs which results in this disordered function. Under these circumstances, out-door life, nu-

tritious food, the avoidance of late hours and of excessive fatigue are all to be strongly urged upon the patient, and in most instances the efforts of the physician are successful, producing a normal catamenial flow.

There is another class of patients, however, who suffer from amenorrhœa which is apparently not dependent upon anæmia or upon general systemic atony. Indeed, in many instances it seems almost impossible to determine the cause of the difficulty. In these instances we have found the permanganate of potassium or the binoxide of manganese in the dose of 2 grains three times a day, in pill, a valuable method of treatment. Either drug should be given for about one week before the expected period, and continued during that time. In persons who have an exceedingly irritable gastric mucous membrane this treatment sometimes results in some distress in the stomach or evidences of slight indigestion, but, as a rule, it is well borne by the patient.

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*SOME FURTHER FACTS CONCERNING THE ALKALOIDS OF HYOSCYAMUS.*

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IN the March number of the THERAPEUTIC GAZETTE we published a leading article upon the subject of "The Untoward Effects of Hyoscine in Acute Alcoholism," and our attention has once more been called to this question by an interesting paper by Spratling, of New York, published in the *Medical Record*, in which he reports the results of his clinical investigations as to the action of hyoscyamine and hyoscine, both upon patients in the asylums with which he has been connected and upon his own person. After quoting several statements from contemporary authors as to the dangerous effects which may be produced by these alkaloids of hyoscyamus, he asserts that, in his opinion, many cases, while temporarily quieted and benefited by these drugs, are permanently injured by their use. He thinks that diffuse headache which has persisted is one of the unpleasant after-effects, and that the disturbances of vision, dryness of the mouth, and the failure of secretion of the glands in the alimentary canal are additional reasons for the non-employment of the remedy. He admits that the drug is of value in cases of paralysis agitans, and that some cases of mania which are very excessive and resistant to other drugs may yield under the influence of one of these two alkaloids, provided that the dose is small. Indeed, he thinks that in many of these cases the good results follow the mental effect of the



hypodermic needle rather than by any direct influence of the drug. He concludes, finally, that hyoscyamine should never be given in doses of any size in disorders of the mind; that it should never be given in any disease in which there is the least degree of inflammatory action or congestion going on, particularly in the brain and its membranes; that it should never be given to a patient who is in a condition of exhaustion, or who is prone to pass into such a condition; that it should not be given in any case for the purpose of producing sleep. He also makes the somewhat unguarded assertion that there is no good authority for believing that it acts as an hypnotic. Finally, he thinks it only of value in chronic conditions of the nervous system manifesting tremor and other mild motor disturbances. We think that Dr. Spratling's paper is of value because it emphasizes the fact, which we have already stated elsewhere, that hyoscyamine and hyoscine, so far as their action upon the general system is concerned, have a very limited sphere of usefulness. In certain cases, such as those which have just been pointed out, they undeniably do good, and we would add nocturnal emissions to the list of conditions which are benefited by the use of hyoscine. Associated with the hyoscine in the treatment of this condition should be instituted, of course, tonic measures and baths. These alkaloids, while they will continue to be employed for the few conditions named, have not fulfilled the expectations which it was hoped they would fulfil some years ago.

#### THE THERAPEUTIC VALUE OF SARSAPARILLA.

IN the *Medical Record* for February 17, 1894, is a short editorial article upon the value of sarsaparilla, and the conclusion which is reached is that it is practically a useless substance, which should be dropped from the Pharmacopœias of the future, and that its use is based more on theory and custom than on any evidence that it does good in disease. We think its value in covering the taste of iodide of potassium is ample reason for its continuing to be a recognized substance in the Pharmacopœia; but aside from this, and aside from the fact that distinct therapeutic properties cannot be assigned to it, there is, nevertheless, a widespread belief on the part of many members of the profession that the addition of sarsaparilla to iodide of potassium in some way distinctly increases the medicinal value of the iodine compound. No less an authority than Wood

asserts that in some cases of syphilis iodide of potassium fails when given alone, and succeeds in some way which we cannot understand if prescribed with sarsaparilla. Whether the sarsaparilla aids in any way in maintaining the activity of absorption in the stomach, or whether it possesses feeble curative powers in itself, no one, so far as we know, attempts to determine, but we are confident that the views enunciated by the author already quoted are correct.

#### THE TREATMENT OF MEMBRANOUS AND DIPHThERITIC CONJUNCTIVITIS.

ALTHOUGH croupous inflammation and superficial diphtheritis of the conjunctiva are closely related, and although many modern writers are disinclined to maintain a distinction between these two affections, there can be little doubt that a sufficient number of each class, well marked, render the maintenance of a differentiation scientifically worthy. Croupous conjunctivitis in its pure type is uncommon and its etiology uncertain. It differs from the diphtheritic type chiefly in the fact that there is a painless swelling of the lids and a membranous exudation upon the surface of the conjunctiva, while the latter is characterized by a board-like induration of the palpebræ and an exudation within the layers of the conjunctiva which leads to death of the invaded tissues, and by pressure tends to destroy the nutrition of the cornea. One therapeutic rule, however, is applicable to both affections,—namely, that nitrate of silver, the standard application in severe catarrhal and purulent conjunctivitis, is contraindicated.

In a recent article by Valude (*Annales d'Oculistique*, February, 1894), concerning the various types of conjunctivitis associated with false membrane, this point receives especial attention. He insists that three methods of treatment, often recommended, should receive only condemnation, whether we deal with a pseudo-membranous or a true diphtheritic conjunctivitis,—namely, nitrate of silver, iced compresses, and sublimate lotion. Nitrate of silver has often been shown to be detrimental under these circumstances, cold compresses are likely to add to the depression which the cornea already feels, while sublimate can do no special good, so far as the bactericidal influence is concerned, and is, as is well known, capable of injuring the corneal epithelium.

In Valude's experience, the essential basis of the treatment consists of sprays, frequently used. These should always be warmed, and may be

composed of boric acid or any non-irritant, mildly antiseptic liquid. He prefers the following lotion :

Extract of opium, gr. iss;  
Sterilized water, Oii;

which may easily be prepared by dropping into two pints of warm boiled water ten drops of a standard solution, composed of sterilized water and glycerin, each half a drachm, and extract of opium, fifteen grains. After experimenting with different antiseptic lotions in a large service, he has adopted this liquid, which has proved to be of the greatest advantage in soothing pain and diminishing secretion. Considerable swelling of the lids may be managed by using, instead of the lotion just described, a naphtholated solution; but, as he points out, this swelling is not so frequent as in true purulent ophthalmia. In addition to irrigations with the antiseptic liquid, he advises an iodoform salve (1 to 50), to be applied twice a day to the conjunctival cul-de-sac, especially if ulcers of the cornea exist. If there is much suppuration, terpinol is recommended. Terpinol, mixed with equal parts of oil of vaseline or oil of sweet almonds, takes the place of the excipient in the iodoform salve.

Referring to the well-known recommendation of Fieuzal, to touch the false membrane in these cases with lemon-juice, Valude states that he has seen improvement occur, but is inclined to attribute it to careful irrigation rather than to any specific action of the medicament. If it is applied at all, it should be done carefully, with a camel's-hair brush dipped in a solution of the juice, by touching only the false, adhering membrane.

In connection with Valude's experiences in membranous and diphtheritic conjunctivitis, it is interesting to refer to the researches of Gilbert Surdille, elsewhere abstracted in full. He thinks that Fieuzal has rendered a real service in reviving the old remedy,—lemon-juice,—and recommends it, provided too much confidence is not placed in its virtues. Believing the affection to be a microbic disease, he is inclined to employ phenic acid in a formula composed of five drachms of glycerin and half a drachm of phenic acid. He proceeds as follows: The eyelids are reversed and the conjunctiva washed with a jet of biniodide of mercury (1 to 20,000). The false membrane is then removed with an alkaline solution, borax or baborate of sodium, after which, with a wad of cotton dipped in the carbolic-acid and glycerin solution, all the diseased areas are thoroughly anointed. In the interval he applies a salve of

methyl-blue (1 to 1000), because Janicke has demonstrated that Loeffler's bacillus does not grow in bouillon containing methyl-blue, even in very minute proportions.

Surdille very properly discards bloodletting, and also, but this, we think, without good reason, the administration of mercury. In our own experience,—somewhat limited, owing to the infrequency of the affection in this country,—in addition to copious irrigation with warm antiseptic solutions and the instillation of atropine, the best results followed the internal administration of quinine, iron, and mercury, the quinine in suppositories, the iron as the tincture, and the mercury either as calomel or bichloride. The last remedy, following Jacobi's recommendation, may be exhibited in milk or water hourly in the dose of  $\frac{1}{16}$  to  $\frac{1}{8}$  grain to children from three to six years of age. Even if the specific action of the remedy is doubted, it has an alterative and tonic influence under these circumstances which is not to be despised. To sum up: During epidemics of diphtheria, especially when the nasal mucous membrane is also affected, the conjunctiva may become inoculated, and a form of conjunctivitis develop almost certain to destroy sight unless prompt treatment is applied. This treatment should consist of copious irrigations with a warmed, mild antiseptic fluid. Boric acid fulfils the indications, and we are inclined to agree with Valude that bichloride has no advantages, and is capable of introducing distinct disadvantages. Atropine drops are indicated if there is corneal ulceration, or atropine may be used at night and eserine during the day, in the manner already several times described in these columns in connection with the ulceration occurring in ophthalmia neonatorum. Iodoform salve should be freely applied within the conjunctival cul-de-sac; indeed, vaseline itself is efficient under these circumstances. Finally, all cauterant applications, particularly nitrate of silver, should be avoided. Very hot water conserves the nutrition of the cornea, and is preferable to the cold applications which are so effectual in the early stages of a purulent ophthalmia. With the special remedies recommended by Valude and Surdille we have no experience, but they suggest trial. Lemon-juice should not be forgotten, and there is enough evidence that good has followed its use to place it among the medicaments best suited to the treatment of this affection. In spite of high authority, we have no confidence in the application of quinine or flowers of sulphur to the diseased lids.

*PRURITUS VULVÆ.*

THE persistent tickling, itching, and burning of pruritus vulvæ points not only to simple hyperæmic irritation, but to a more marked involvement of the skin-covering and its terminal nerve-bulb filament. Webster, on the basis of microscopic examination of excised portions of skin affected with pruritus, describes a subacute inflammation of the papillary bodies and advanced fibrosis of the nerve-endings, especially marked in the region of the clitoris and the upper portion of the smaller labia. These observations strongly suggest that the disease is in reality an inflammatory neurosis of the vulvar corium.

The severe forms are always associated with local lesion. Even though this is not perceptible to the casual examination, microscopic research will reveal thickening and infiltration.

The pruritus is usually caused by a local disease of the vulva. This region is swarming in germs. It is claimed that in diabetic pruritus the leptothrix and allied organisms occasion the deep skin inflammation, but others of the mycoses, such as that due to the *oidium albicans*, are often attended with itching.

Webster classifies the cases of pruritus as follows: 1. Endogenous cases. Under this heading are included those in which the blood is altered, as from icterus, chronic nephritis, diabetes mellitus, the waste products circulating in the blood acting upon the terminal nerve-filaments and occasioning itching. Under the same heading would be included the pruritus due to medicines, such as morphine, iodoform, alcohol, etc. Under the endogenous cases would also be classified pruritus caused by varices or congestion of the pudendal veins of the hemorrhoids or of the pampiniform plexus, such as may come from a weak heart, pregnancy, hemorrhoids, or displacement or overgrowths of the womb. Moreover, certain well-known skin-diseases may occasion vulvar itching. Thus, erythema, herpes, urticaria, and certain forms of eczema may after an acute attack leave permanent alterations of the papillary bodies, which react upon the nerve-endings. Finally, fermentation in the intestinal tract may give rise to products which, absorbed into the blood, may act upon the nerve-endings. The frequent occurrence of constipation in women makes this a causative factor of no little importance.

Under the exogenous cases are classed those due to alteration or increased secretions of the vulvar glands, hyperidrosis, seborrhœa, polyuria with either altered or normal urine, dis-

eased secretion from the vulva, vagina, and uterus, catarrh and suppurative secretions from the rectum, especially discharges from inflamed piles. These secretions are irritative partly from their direct chemical action, partly from their decomposition, irritant products being formed which act directly upon the macerated epithelium, causing erythema, intertrigo, eczema, and in certain cases prurogenous vulvitis. Causes of a parasitic nature are also frequently operative in causing pruritus. Thus, the pediculi, the ascarides, the oxyuris vermicularis, leptothrix, *oidium albicans*, *micrococcus urænae*, *gonococcus*, *smegma bacillus*, the ordinary putrefactive bacteria, and the streptococci and staphylococci are said to be, if not the primary and predisposing, at least the secondary exciting causes of itching.

Of mechanical causes, masturbation will perhaps take the first rank; persistent washing and friction, especially when applied by means of sponges which are always unclean, encourages infection. The symptoms are aggravated by the scratching and rubbing occasioned by the symptom. Thermic influences are also operative; thus, there is a winter and summer pruritus.

Usually careful examination as to etiology indicates the most promising method of cure. Thus, where the disease is due to parasites, lack of cleanliness, to drugs, to decomposing discharges, to venous congestion, etc., the efficient treatment is obviously removal of the cause of the diseased local conditions. In those cases dependent upon visceral alteration, the local treatment must be subordinate to attention to the general condition. Thus, the appropriate regimen must be indicated in each instance in accordance with whether the patient be diabetic, jaundiced, subject to Bright's disease, or suffering from venous congestion incident to heart weakness. The gouty or rheumatic diathesis must be properly treated.

Antiseptics as local applications are most useful. These are generally combined with astringents and with local anesthetics.

Among the favorite methods of treatment are prolonged hot baths, followed by hot douches. These douches should be antiseptic and anæsthetic; thus, solutions of carbolic acid as hot as can be borne are of special service. It is noteworthy that the area affected by pruritus can stand a much stronger solution than can be used upon a healthy surface; thus, irrigations of 1 to 40 or 1 to 20 may be made. Bichloride is also serviceable, but the anæsthetic effect of the carbolic acid is lacking in this drug. A favorite prescription of D. Hayes Agnew, ~~was~~

ommended as almost a specific in pruritus ani, is:

R Sulphate of zinc,  
Alum, of each, equal parts.

To be mixed and heated until the water of crystallization is driven off. A drachm of this is added to an ounce of water and is applied locally. At times the carbolic lotion proves too irritating; then a simple astringent may be employed, such as fluid extract of hydrastis, 1 drachm to 1 pint, or hamamelis, fifty per cent., or even full strength. After prolonged douching, either with hot solutions of hydrastis or hamamelis, the parts may be bathed with a prescription made up of,—

R Menthol, gr. i;  
Cocaine, gr. xxxvi;  
Alcohol,  
Water, of each, ʒi.

Or an ointment may be applied made up of,—

R Menthol, ʒi;  
Simple cerate, ʒii;  
Oil of sweet almonds, ʒi;  
Carbolic acid, ʒi;  
Pulv. zinc oxide, ʒii.

Or,

R Menthol, ʒi;  
Carbolic acid, ʒi;  
Lanolin, ʒii;  
Pulv. zinc oxide, ʒii;  
Unguent. zinc oxide, ʒi.

Or a strong lotion of carbolic acid may be dabbed on, according to the following formula:

R Carbolic acid, ʒii;  
Glycerin,  
Water, of each, ʒix.

Painting the vulva with glycerin mixed with a ten-per-cent. solution of chloroform and glycerin, with a ten-per-cent. solution of carbolic acid and glycerin and alcohol, or a solution of nitrate of silver of similar strength, is sometimes serviceable.

Madden recommends oleate of chloral painted over the parts. This is a compound formed of equal parts of camphor, chloral, and oleic acid. Where the disease is due to irritating uterine or vaginal discharges, he recommends the introduction of a tampon of cotton-wool loaded with equal parts of finely-powdered alum and sugar, and carried within the vulvar orifice. He holds that in his dispensary practice black wash is regarded as a most generally useful as well as a very cheap available application in such cases.

Goodell recommends a strong emulsion of iodoform and glycerin (ten to twenty per cent.).

Skene commends vaginal douches of acetate of lead, and dusts subnitrate of bismuth on the labiæ to prevent friction. This he holds is especially serviceable in diabetic cases. In the cases in which the etiology was obscure, he states that the remedies which have given him the best results are bichloride of mercury in emulsion of bitter almonds, one grain to the ounce, applied to the parts affected twice a day; a powder composed of one grain of morphine to two grains of chalk, applied night and morning; equal parts of tincture of opium, iodine, and aconite, and eight per cent. of carbolic acid, applied once a day; and ethereal solution of iodoform, applied by means of an atomizer. In some cases application of equal parts of carbolic acid and tincture of iodine relieved permanently. This was used in one case by means of an atomizer, the spray being driven under high air-pressure. An acute inflammation followed, but after the patient recovered from this the pruritus did not return. In certain cases, in spite of every local and general treatment, disease persists and renders life almost unendurable. Under such circumstances there remains surgical intervention.

Carrard reported the first case of surgical intervention. The clitoris was the part affected; its removal was followed by cure.

Schroeder carefully localized the points of itching, and then removed them by section in five cases. In one of these cases the disease was complicated by carcinoma. In another, in addition to excision of the diseased vulvar surface, a ring of skin was taken from around the anus. In the three remaining cases the disease was purely pruritus vulvæ. In the first, a small area was removed from the right labium majus; in the second, the right labium majus was excised, and following this several lesser operations were performed; in the third, in which both the clitoris and lower lips were involved, the operation was more extensive. The women all recovered. The operator stated that intervention should only be attempted when the itching was localized, and cautions against attempting to cure a widely diffused pruritus by the knife.

Küstner also reports three successful cases.

Martin reports four, and a number of other operators state that the results were successful.

Sänger (*Centralblatt für Gynäkologie*, No. 7, 1894) contributes the full notes of two cases, both entirely successful.

He closes his thesis with the following statement :

The partial or total extirpation of the vulva is an entirely legitimate operation in cases of chronic pruriginous vulvitis not curable by other means. In younger persons the surgeon should be content with partial operation. In aged persons, when the disease is widely extended, the whole vulva, including the glans clitoris, should be entirely extirpated and the wound closed by plastic operation.

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## Reports on Therapeutic Progress.

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### OSTEOMALACIA TREATED BY CHLOROFORM INHALATIONS.

The correspondent of the *Medical Press and Circular*, writing from Vienna under date of January 26, gives an account of a patient presented by Latzka at one of the medical meetings in that city. The patient had quite recovered, it was stated, from osteomalacia after chloroform narcosis. Latzka pointed out that at the present time there were two theories enunciated by Petroni that might be cited as the proximate origin of the disease,—viz., the micro-organism or nitrification theory, and the effect of castration and Porro's operation, which properly depend upon chloroform narcosis. Latzka said that he had observed a marked change in osteomalacia for a few weeks after the application of chloroform, which frequently proved to be temporary. This led him to question the theories more accurately, and in his investigations, according to the proofs of Petroni, who maintained that nitrates were constantly in the urine of the osteomalacia, he failed to satisfy himself that any constant relation existed between the nitrites and the disease. Indeed, three out of seven cases carefully followed failed entirely in this particular; two of the same number presented an occasional testimony after the urine had stood for some time, the remainder very rarely. In the fresh urine, nitrites could never positively be proved present. In this, he pointed out, he was not alone, as Karplus had obtained similar results. He considered the nitrification hypothesis of Petroni to be unsupported from the present proofs.

With regard to the second hypothesis, he brought forward the history of ten cases which had fallen under his own observations; one of these was a male; six were puerperal osteomalacia; the other three were non-puerperal. In these ten cases his treatment was simply anæ-

thesia by chloroform, and of the ten only one remained unaffected, two others were but slightly improved, while the remaining seven were decidedly much better, but, unhappily, the recovery was of a temporary character. Only one of these cases which he showed had retained any lasting effect. This case had been treated with chloroform seven months ago; the subjective and objective pains had all disappeared, the former elastic pelvis is now solid, and the patient considers herself at present perfectly well.

A second of this number is greatly improved, which possesses some interest from the former treatment under Schauta, who had operated four months previously for double-sided salpingitis with ether, but without any influence on the osteomalacia or relief to the patient. Immediately after the chloroform narcosis, four months later, the pain was relieved, the luxated joints became firmer, and the patient soon became so much restored that she could move about. As stated above, these brilliant results were but temporary. On this account he attributes many of the successes in castration and Porro's operation to the chloroform and not to the operation itself, although he admits that these operations have cut off the function of generation and prevented the return of the disease. In this manner he reasons on the cause of return of many successfully treated cases of osteomalacia with phosphorus, wherein the first pregnancy excites the disease. In the chloroform treatment he considers the disease checked, but on recommencement of the menses the disease is excited. From the results obtained he is inclined to believe that some modification of chloroform narcosis may be successfully pursued in the treatment of osteomalacia.

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### INTERSTITIAL INJECTIONS OF IODINE IN THE TREATMENT OF GOITRE.

DR. GEORGES MANGIN, an interne of the Paris hospitals, contributes an article on this subject to the *Gazette Médicale de Paris* for January 13, in which he gives the details of the procedure as practised by Dr. Duguet. These injections, he says, may be employed in any case of goitre, but they are especially appropriate in those of medium size, of comparatively recent formation, fleshy, not much indurated, and not yet calcified, whether they are cystic or not. This little operation succeeds best in hydatid cysts of the thyroid body, which are always cured by a single injection. Contraindications are: albumin or sugar in the urine, the existence of the menstrual flow, ex-

ophthalmic goitre, cancerous goitre, and a cystic goitre containing blood (only a relative contraindication). Accidents in this treatment have occurred to certain operators only because they have not strictly followed the letter of M. Duguet's instructions. Before undertaking the operation certain precautions should be taken. The patient's urine should be examined; it should be ascertained if she is menstruating; and the neck should be measured immediately above the goitre, around it, and below it, and this measurement should be repeated before each injection. Various liquids have been tried, but none is so good as pure tincture of iodine. The needle of the syringe should be of steel or of irido-platinum, and it should be very sharp. After being used it should be cleansed in a very weak solution of ammonium chloride or potassium iodide, and then left until it is to be used again in a ten-per-cent. oily solution of carbolic acid. This having been done, it is necessary to determine the most appropriate point for inserting the needle. The operator should assure himself that the tumor has no souffle and that it presents no expansile movements; then he should palpate it carefully to find the central, fleshy, least resistant part, as far as possible from the large veins which sometimes ramify over its surface and also from any arterial pulsations. Into that point he should plunge the needle. The syringe is to be filled with tincture of iodine and the air expelled. Then the operator raises the patient's head in such a way as to make the throat prominent, holds the tumor immovable between the thumb and forefinger of the left hand, compressing it gently, with the right hand plunges the needle slowly to the depth of from half an inch to an inch, and waits to see if any liquid escapes through it. If pure blood flows, the procedure is to be stopped, the needle is to be withdrawn, and an attempt made to introduce it in one or two other situations, until one is found from which there is no flow of blood. If this cannot be done, the idea of administering the injection must be given up for the time being. If a coffee-colored liquid flows, the syringe should be connected with the needle, and, if the cyst is small, the liquid aspirated, and then the injection proceeded with. If, on the contrary, the cyst is large, slow aspiration should be performed with a regular aspirator. In case the injection is to be proceeded with, the syringe filled with tincture of iodine is to be connected with a needle and the piston pushed down very gently and slowly, while the operator observes the patient's face and interrogates him as to his sensations. At the first injection

not more than half or three-quarters of a syringe-ful should be injected. When the injection has been made, the needle, still connected with the syringe, is to be withdrawn rather suddenly; then the left forefinger is to be placed over the puncture in order to stop the slight discharge which might occur. If the patient's neck or the operator's hands have been soiled by the tincture of iodine, they should be washed in ammonia-water. Usually nothing special occurs as the immediate result of these injections, but sometimes there is observed local heat, with tumefaction, a little embarrassment of the movements of the neck and in swallowing, and occasionally some painful sensations about the jaw, the teeth, or the ear of the side on which the injection has been made. These are benign phenomena and do not last more than a day or two. They constitute no reason for not repeating the injection weekly, as should be done. Occasionally there is feverishness, with chills, headache, depression, agitation, sleeplessness, and gastric disturbance, symptomatic of a slight degree of acute iodism, which usually does not last more than from a few hours to a day or two. The author closes with the statements that this method of treatment acts by causing absorption and a non-suppurative inflammation, and that it is absolutely harmless and of marvellous efficacy when it is employed early and with discernment.—*New York Medical Journal*, February 10, 1894.

#### TREATMENT OF TUBERCULOSIS WITH CINNAMIC ACID.

PROFESSOR ALBERT LANDERER, of Leipsic (*Therapeutische Monatshefte*, February, 1894) highly recommends intravenous injections of cinnamic acid in the treatment of tuberculosis. Cinnamic acid and its salts are strongly chemotactic. Intravenous injections call forth a marked leucocytosis. The polynuclear leucocytes are increased, and, to a less degree, the eosinophiles. Leucocytosis begins in one and a half or two hours after injection, and reaches its maximum in eight hours, with an increase of two and a half times in the number of leucocytes, which seem to come especially from the spleen. Leucocytosis is not nearly so decided after intramuscular or subcutaneous injections. The number of red blood-cells, even when injections are long continued, is not lessened, and the same is true of hæmoglobin.

Landerer reports:

1. A series of thirty-three cases of chronic

lung-tuberculosis without demonstrable cavities. Of these, all but two were cured.

2. A series of twenty-two cases with cavities, but without marked fever. Only two are known to have died, nothing definite is known of six, and it is admitted that others may have died.

3. A series of eight cases presenting continuous high fever. These cases are hopeless (six of the eight died), but most of the patients feel better and probably live longer.

4. A series of fifteen cases of galloping consumption; eight of the patients died and four more will probably die; two cases have remained cured for two years and one for three months.

Landerer saw also two cases of tuberculosis of the intestine, one case of tabes mesenterica, and two of mediastinal tubercular tumor. These were cured. A case of genito-urinary tuberculosis was considerably improved.

For the technical details of this treatment, Landerer refers his readers to his book, "Amweisung zur Behandlung der Tuberculose mit Zimmtsäure," Leipsic, F. C. W. Vogel. To statements there made he adds now that in many cases the emulsion may be replaced by a five-per-cent. watery solution of cinnaminate of sodium, the dose to be injected remaining about the same or somewhat larger; the injection may be given three times a week. For advanced cases, at least at first, only the watery solution can be used. Even if the intravenous injection is not difficult, it should be carefully practised, and a careful asepsis also belongs to it.

In surgical tuberculosis, instead of the emulsion, cinnaminate of sodium (five per cent.) and (especially to inject in the joint cavities) a suspension of cinnamic acid in glycerin (1 to 20 to 1 to 10) may be used. Both preparations must be immersed in a water-bath for at least ten minutes to sterilize them, and may be kept in tightly-closed bottles for weeks.

Sometimes a rise in temperature is noted when the first injection is made.

Injections are made in the fungous mass, in the joint cavities, and in the gluteal muscles, where the injections of mercurial salts are given.

#### THE SUBCUTANEOUS INFUSION OF COMMON SALT FOR ACUTE ANÆMIA.

DR. O. FEIS (*Therapeutische Monatshefte*, February, 1894) reports three cases of extreme anæmia after abdominal surgical operations, in which the injection of common salt was apparently the means of saving life.

The instruments for subcutaneous infusion

are perfectly simple. All that is needed is a tolerably strong canula, a rubber tube, and a funnel.

The infraclavicular region is the best place to make the injection; the skin and all instruments are disinfected in the usual way, the skin raised in folds, and the needle, with the salt solution flowing (to prevent the introduction of air) inserted. From a moderate height the fluid is let flow, the funnel being kept full. If too much collects under the skin, it is stroked away with a gentle massage.

In from ten to fifteen minutes one quart may be infused in this way. The place of the puncture is finally closed with sterilized cotton batting, fastened with sticking-plaster. Drs. Feis and Schwalm have prepared pastilles of chemically pure salt, which physicians may have always at hand.

#### THE MEDICINAL TREATMENT OF MUCO-MEMBRANOUS ENTERITIS.

From a communication made to the Académie de Médecine by PROFESSOR GERMAIN SÉE, relative to the drug treatment of muco-membranous enteritis, the following abstract is published by *La Médecine Moderne* of January 3, 1894:

"A. *Purgatives*, comprising,—

"1. Flaxseed or *psyllium* (mechanical means).

"2. Senna, combined with a vaso-motor constrictor: *hydrastis canadensis*.

"3. Castor oil.

"4. Olive oil in large doses, internally or by enemata.

"A few words now in regard to each one of these four means of producing evacuation.

"1. *Flaxseed* or *Psyllium*.—The patient, immediately after each one of the three principal meals, should take a tablespoonful of pure flaxseed, placed for three or four minutes in a quarter of a glassful of cold water. If the flaxseed is objectionable to the patient, it can be substituted with *psyllium*. These substances are sufficient in themselves, in the majority of cases, to produce movements of the bowels, without having to resort to the administration of the various mineral-waters, some of which, owing to the sulphate of sodium present in them, often give rise to constipation afterwards. Objection has been made against inert substances as possessing the disadvantage of causing obstruction of the cæcum; but in the many cases that I have observed, in an experience of over twenty years, in which patients have constantly made use of them, I have not met with a single

in which the obstruction could not be easily done away with by a mild laxative.

"2. *Hydrastis Canadensis* and *Senna*.—If the use of inert bodies, like flaxseed, is not sufficiently efficacious to move the bowels, I am in the habit of prescribing a mixture which has great advantages. It can be daily administered at meal-time, without causing too much purgation and without rendering patients unable to attend to their various occupations. It is a combination of senna and *hydrastis canadensis*. Why do I prefer senna to other purgatives, and why do I combine it with *hydrastis canadensis*? Here are my reasons: The leaves of senna, in moderate doses (1 to 2 grammes), cause the expulsion of gases, and, after five or six hours, solid passages, unattended with colicky pains. In doses of from 2 to 4 grammes, the senna leaves exercise all their purgative power without causing congestion of the intestines. The most remarkable fact about this action is that it does not give rise to constipation, the drug exerting an influence particularly on the large intestine. The therapeutic effects of *hydrastis canadensis* are the result of excitation of the vaso-motor centres, accompanied with decided contraction of the vessels and elevation of the blood-pressure. These effects tend to correct the vascular relaxation caused by the senna, and hence the association of both remedies. The pilular form appears to me the best for administration purposes, according to the following formula:

R Alcoholic extract of *hydrastis canadensis*, 30 to 45 grains;

Senna leaves bathed in alcohol,  $\text{ʒiiss}$ .

M. and make 50 pills.

Sig.—1 pill after each meal.

"3. *Castor Oil*.—From time to time it is convenient to suspend the use of the flaxseed and the pills of *hydrastis*, in order to induce a free but not too strong purgation. In these cases no saline purgative, no drastic remedy, can be employed to better advantage than castor oil in doses of from 150 to 375 grains. In the course of one to three hours evacuations are produced without pain and without intestinal irritation. The substance may be employed in inflammatory conditions of the bowels, and for better reasons in muco-membranous irritations of the intestines.

"4. *Olive Oil in Large Doses*.—Since the treatment of hepatic colic by large doses of olive oil has been introduced into France, through the work of American physicians, I have tried the same treatment in mucous enteritis with remarkable and often decided suc-

cess. The oil may be administered, either by itself or in sugared tea, in doses of from 3 to 4 dessertspoonfuls the first day, morning and evening; the second day at noon, the same dose before the second meal; the third day, a glass at the same hours; and the fourth day, a whole glass at once. After this the patient must rest for four or five days,—that is, the medication should be suspended, to be again renewed as prescribed. If the first trial shows a non-tolerance of the drug on the part of the patient, the method must be abandoned. Generally, however, the oil is well borne, more so than may be supposed, and in these cases the muco-fæcal movements produce an unexpected relief and sometimes a cure, at least for a considerable time. The large enemata of olive oil proposed by Pleiner appear to do some good, but this cannot be compared to that effected when the oil is ingested through the mouth.

"B. *Sedatives*.

"The second indication is to assuage pain without resorting to narcotics or mydriatics. Narcotics like morphine and mydriatics like belladonna cause constipation and anorexia, which interfere with nutrition. These substances, therefore, being eliminated, I know of no better medicaments in the management of this second indication than the bromides of calcium and strontium and cannabis. I say the bromides of calcium and strontium. The bromides of sodium and potassium ought not, in fact, to be employed, and for various reasons. They irritate the stomach, weaken the digestive powers, and diminish the general forces of the patient. These disadvantages are not met with in the bromides of calcium and strontium, which are well tolerated by the stomach. From 2 to 3 grammes in the day are sufficient to lessen the sensibility of the mucous membrane of the stomach, especially when 1 gramme in solution is taken *during* each one of the principal meals. The following combination is advised:

R Bromide of calcium,  
Chloride of calcium, of each,  $\text{ʒii}$ ;  
Distilled water, Oi.

"In default of the bromides, he prescribes cannabis indica, as follows:

R Solution of gum-arabic,  $\text{ʒiv}$ ;  
Extract of cannabis indica, gr. ii. M.  
Sig.—3 tablespoonfuls per day, 1 before each meal.

"If great pain is present, one of the best modes of producing relief is the administration of menthol, in the following manner:



R Menthol, gr. ii-iii;  
Alcohol, q. s. to dissolve it;  
Distilled water, Oss. M.

Sig.—Two tablespoonfuls by the mouth t. d.

*“C. Regarding Fermentation.”*

“To diminish fermentation is the third indication to consider. Many popular remedies have been used for this purpose, such as the carminatives like aniseed, antiputrefactives like charcoal, etc., but their value is doubtful and sometimes they exert a noxious influence. Charcoal especially may injure the gastrointestinal mucous membrane. I know of three efficacious means only by which to meet this indication, and I am in the habit of combining them. The first is the administration of the phosphate of sodium, which I place above any other antiputrefactive or absorbent substance. With from 45 to 60 grains of phosphate of sodium a day I have obtained remarkable results. The amount of the drug is divided into three parts, each one of which is ordered to be taken in a little water, after meals.

“For flatulence, the best remedies are salicylic acid in doses of 3 grains and salicylate of sodium associated with 6 grains of the phosphate of sodium. These drugs will at the same time diminish the sensibility of the mucous membrane. Borate of sodium or borax is an excellent substitute for the agents mentioned, and it particularly aids the digestion of milk.

“I will now, by way of parenthesis, refer to the great medicaments favored by a certain school. I allude to the antitoxic and antibacterial remedies. *A priori* it would seem that nothing could enhance more the development of autointoxication than the general intestinal disease itself, and particularly the mucobranous catarrh. But bacteria are not more common in pathological than in normal conditions of the intestine, or, on the other hand, such germs may be of the same kind. The bacillus coli communis is an instance. It does not seem logical to employ bactericides against bacteria which do not exist in pathological conditions, or which also exist in normal conditions.

“Benzonaphthol, associated or not with the salicylate of bismuth, is injurious, and there is not a dyspeptic who does not consume a few cachets of the drug (30 to 60 grains per day). The same may be remarked in regard to patients suffering from intestinal disorders; upon the latter the effects produced are very bad, especially when the salicylate of bismuth is combined with naphthol. Constipation, which ag-

gravates the disorder, is the most grievous consequence.

“Benzonaphthol, in its turn, is at present being opposed and widely discredited as a remedial agent; the researches of Kuhn are contrary to those of Ewald, and prove the uselessness of this product as an antiseptic substance.”

*ABSORPTION OF GUAIACOL BY THE SKIN.*

LINOSSIER and LANNOIS (*Sem. Méd.*, February 7) have studied the absorption of guaiacol by the skin and its elimination by the urine after application to the skin. Their experiments prove that the drug is really absorbed by the skin, as the effect takes place with equal intensity when the patient breathes through a tube opening outside the room in which he is. After the application of 15 grains of guaiacol, elimination by the kidney was already manifest at the end of a quarter of an hour. The proportion of guaiacol contained in the urine reaches its maximum from one hour and a half to four hours after the application. It decreases rapidly after from six to seven hours; in twenty-four hours only traces of the substance can be found in the urine. The quantity of guaiacol eliminated in the urine may amount to one gramme eleven centigrammes, or 55.5 per cent. of the quantity applied to the skin. These researches seem to show that applications of guaiacol may be used to supplement the ingestion or subcutaneous injection of this substance. To quicken the absorptive process, the surface to which the drug has been applied should be covered with some impenetrable material.—*British Medical Journal*, February 17, 1894.

*TRACHEAL IRRIGATIONS IN THE TREATMENT OF CROUP.*

After giving the details of a successfully treated case of croup by the method of tracheal irrigations, the child being placed in an inclined position, GUELPA (*Journ. de Médecine de Paris*, December 24, 1893) draws the following conclusions:

1. Tracheal irrigations, while the child lies with the head lower than the feet, are not only destitute of danger, but are also well borne and easy of application. (In the case described by the author the irrigations were practised by the father of the little patient, with the aid of a servant.)

2. The constant inclined position of the patient in bed facilitates the expulsion of bronchial mucosities, and is a very pr

measure, of great value in the treatment of croup in all the stages of the disease.

3. Abundant irrigations exercise a beneficial influence also in diphtheritic manifestations of the throat and nose; therefore they ought likewise to be practised in cases of diphtheria of the larynx and trachea.

4. Finally, the case that has been described seems to show that, with reference to the etiology and treatment of concomitant or late thoracic lesions of croup, these cannot be looked upon as direct or indirect consequences of respiratory infection, but that the condition of the digestive organs must be considered also; indeed, the case shows that the infection of the bronchi and pleura was of an intestinal origin.

#### HYPODERMIC INJECTIONS OF PHENIC ACID IN THE TREATMENT OF RHEUMATIC AND GENERAL PAINFUL AFFECTIONS.

In an interesting article, ANDRÉ MARTIN (*Les Nouveaux Remèdes*, January 8, 1894) describes several cases of muscular, tendinous, and articular rheumatism, of neuralgia, and other similar affections in which the subcutaneous injections of phenic acid produced satisfactory results. The author believes that,—

1. Phenic acid, hypodermically used, deserves a marked place in the list of nervine remedies.

2. If the phenic acid injections, of the strength of from one to two per cent., act somewhat less rapidly than those of morphine or antipyrin, their efficacy is the same, without presenting the inconveniences of the latter remedies, and without causing either immediate or remote untoward effects.

3. Since they do not act on the cerebral or digestive functions, the injections of phenic acid may be administered at any hour of the day, and in all medical or surgical cases in which the disease is characterized by an element of pain that requires special attention.

4. These injections are indicated not only in particular cases, but may constitute an exclusive and constant mode of treatment in all cases of muscular, tendinous, or articular rheumatism, peripheral neuralgias, and other similar disorders.

The author advises the following combination:

- R Pure phenic acid, 15 to 30 grains;  
Neutral glycerin or alcohol at 90°, 15 to 30 grains;  
Distilled and boiled water, 3 ounces.

Every 16 minims of this mixture contains  $2\frac{1}{2}$  to  $2\frac{3}{4}$  of phenic acid. One to three in-

jections may be administered during the day, as required. These doses are not toxic; but for the sake of precaution, especially in cases of kidney-trouble, daily examination of the urine is sufficient to prevent the occurrence of untoward phenomena.

#### ASAPROL IN THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM.

In a critical article on the treatment of acute articular rheumatism, DUJARDIN-BEAUMETZ (*Bull. Génér. de Thérapeutique*, January 15, 1894) reviews the actions of salicylic acid, antipyrin, and exalgin in this disease, and, after pointing out the advantages as well as the disadvantages exhibited by these drugs, special consideration is given to the employment of asaprol in the disorder in question. Asaprol is a white powder, perhaps of a slightly rosy color, without odor, and having a taste resembling that of the salicylates. It is readily soluble in water and alcohol; in water in the proportion of 100 to 160 of asaprol. The drug is antiseptic and particularly non-toxic. In rabbits, 2.50 grammes per kilogramme of body-weight produces no deleterious effect. Intravenously, however, the fatal dose varies from .75 to .95 gramme per kilogramme of the body-weight. It is eliminated by the urine in the form of sulphuric ether-naphthol, and is there recognized by perchloride of iron, with which it gives a dark-blue coloration. Asaprol is well borne by man, in therapeutic doses of from 3 to 10 grammes (45 to 150 grains), and does not cause dyspeptic or nervous disturbances; it diminishes the pulse and the bodily temperature. It causes neither tinnitus aurium nor skin-eruptions. Asaprol may be given in daily doses of from 4 to 6 grammes (60 to 90 grains), in the form of cachets or in solution. The author recommends the following combination:

- R Asaprol,  $\text{ʒiv}$ ;  
Water,  $\text{ʒxxx}$ .

Sig.—3 to 6 teaspoonfuls during the twenty-four hours, in sweetened water flavored with aniseed or curaçoa.

In this form the drug was administered in thirty-six cases of acute articular rheumatism, of which fifteen cases were of the polyarticular and twenty-one cases of the subacute type of the disease. In the first fifteen cases, there was noticed *considerable amelioration* in one case in twelve hours' treatment, in four cases in one day, in two cases in thirty-six hours, in six cases in two days, in one case in from three to five days, and in one case in from three to

seven days. A cure was obtained in one case in from one to one and a half days of treatment, in two cases in two days, in one case in two and a half days, in three cases in three days, in one case in from three to six days, in four cases in four days, in two cases in from nine to fourteen days, and in one case in ten days. In the twenty-one cases of subacute rheumatism, *considerable amelioration* was observed in thirteen cases in from twelve to thirty-six hours' treatment, in five cases in forty-eight hours, in two cases in from two and a half to three days, and in one case in four days. A cure was obtained in three cases in thirty-six hours' treatment, in one case in forty-eight hours, in three cases in two and a half days, in two cases in from two and a half to four days, in one case in three days, in two cases in from three to four days, in one case in from three to five days, in one case in four days, in one case in four and a half days, in two cases in five days, in one case in five and a half days, in one case in five to sixteen days, in one case in six to thirteen days, and in one case in seven days.

These results seem to show that *asaprol* is not only equal but even superior to the *salicylates*, the rapid amelioration produced by the drug being soon followed by a cure. In none of these cases, nor even in patients suffering from albuminuria, were there noticed untoward after-effects, such as ringing in the ears, intolerance, or similar phenomena. Though considering internal medication as the more important measure in the treatment of acute articular rheumatism, the author appears to regard the external application of remedies as of some service. He refers to the ointment recommended by Bourget, which is as follows:

R Salicylic acid,  
Lanolin,  
Essence of turpentine, of each, gr. xv;  
Lard,  $\bar{3}$ iss.

It is affirmed that half an hour after rubbing with the above ointment salicylic acid appears in the urine. Ruel has used with advantage the following ointment:

R Salicylic acid,  $\bar{3}$ vi;  
Absolute alcohol,  $\bar{3}$ iv;  
Castor oil,  $\bar{3}$ viii.

The admixture of chloroform to this combination is said to enhance the absorption of the salicylic acid, but Dujardin-Beaumetz believes this procedure dangerous and apt to cause serious effects.

#### THE TREATMENT OF CHRONIC HYPERTROPHIC RHINITIS WITH PERCHLORIDE OF IRON.

MOUNIER (*La France Médicale*, January 19, 1894) recommends the use of perchloride of iron in the treatment of chronic hypertrophic rhinitis. In the seven cases reported in his paper, satisfactory results were observed by the author. The drug, he states, is not of much value in nasal obstructions due to persistent chronic hypertrophy of the parts involved, or to polypoid formations, which, although reduced by a prolonged treatment with the local use of iron, are better managed by the galvanocautery. However, in the large majority of cases, the local treatment here indicated (with iron) gives the desired results, since more often than not soft hypertrophies are met with, and these are the conditions that readily yield to the topical applications of iron. These applications are advantageous, since they can be made by all practitioners, and are not followed by any serious complications. The author recommends the use of either of three watery solutions, of the strength, respectively, of 1 to 4, 1 to 2, and 1 to 1, and named Nos. 1, 2, and 3. No. 1 is to be used in the case of infants, No. 2 in older children, and No. 3 in adults in whom No. 2 has failed to produce the desired effects. The remedy can be applied by means of a sound, using or not a nasal speculum.

#### ON SALICYLATED STUFFS.

In an analysis of the various commercial stuffs employed in practical medicine, M. BARTHE (*Arch. de Médecine et de Pharm. Milit.*, February, 1894) never found a greater portion than 3.52 grammes of salicylic acid in 100 grammes of the sample examined. Again, an analysis of several samples of the same salicylated stuff never gave the same proportion of salicylic acid; these proportions varied from 2.30 to 3 grammes in 100 grammes. These salicylated preparations, even by handling them, were found to lose some of the supposed original amount of acid contained in them. For example, a sample of absorbent cotton thought to contain 2.59 in 100 grammes, by being rubbed between the fingers, only gave at one analysis 2.17 of salicylic acid in 100 grammes. The author concludes, from his numerous analyses, that the salicylated preparations do not contain the proportion of five per cent. of salicylic acid, as announced by the various manufacturing French houses, but only three per cent. on an average. Surgeons, therefore, he thinks, before using the-

cylated preparations, should not rumple them up between the fingers, since such procedure tends to diminish their antiseptic richness.

#### MALIGNANT DISEASE OF THE RECTUM.

GAY contributes to the *Boston Medical and Surgical Journal* of March 1, 1894, a useful paper on this topic. He thinks the treatment is palliative or radical. The opinion is gaining ground in this country that the former is preferable in very many patients. The operation or mode of treatment which cures cancer has not been discovered; hence the object of our efforts in the management of the affections under consideration is to give the sufferers all the comfort possible. It does not always seem desirable to prolong life, and yet that is very properly one of the objects of the physician's work.

The treatment of this disease may be considered under three heads,—namely, the alterative, the opium, and the operative methods. Whether one or all of these modes of treatment shall be pursued in any given case depends upon circumstances.

A good illustration of the alterative method was seen in the case of a policeman about forty years of age, who had a malignant ulcerating mass three inches in diameter upon the anterior wall of the rectum above the sphincters. Its location precluded any radical operation and the symptoms did not call for colotomy. He took from 9 to 27 drops of the compound tincture of iodine daily for upward of two years; once or twice a day he took an enema containing from 1 to 2 grains of cocaine. He was thus enabled to do his work as patrolman for the above period. The time finally came when his strength began to fail, and on the day that he was discharged from the force he went into an adjoining room and shot himself dead. He fully understood the hopeless nature of his disease, and the moment that he was disabled he took the management of the case into his own hands.

In view of the fact that this man was always better on resuming the treatment, his physicians could not but think that it had a decided beneficial effect.

It is nearly three years since the writer removed the growth (two inches in diameter) from the rectum of a man forty-seven years of age, by Cripp's operation. It was pronounced malignant by competent authority. The symptoms were pain and hemorrhage. He has taken the iodine daily since the operation, and there has been no return of either symptoms or growth.

Six years ago he removed a similar growth from the rectum of a middle-aged lady, by Cripp's operation. For four years she took Chian turpentine and drank Ypsilanti water constantly. There has been no recurrence of the hemorrhage or of the disease. He believes the cure ascribable to a mistake in diagnosis rather than to the treatment.

Many years ago Dr. Henry M. Field, of Newton, suggested the iodine method of treating malignant disease of the rectum. He thought he had seen beneficial effects from its use; and, so far as regards two cases, which the writer saw with him, he confirms Dr. Field's opinion. For a long time Gay has given the drug to nearly all of his patients with malignant disease, wherever located, provided they could take it without disturbing the stomach. In many cases no benefit was apparent. The rapid growing and malignant ones, as might be supposed, derive less aid from it than others.

The natural course varies so much in different individuals that it is extremely difficult to arrive at reliable conclusions as to the true value of any drug in checking or modifying the new growths. Chian turpentine, condurango, and many other articles have had their day, and have been discarded because they did not stand the test of experience. He claims nothing for iodine. He uses it because it is our duty to give these unfortunate people the benefit of every possible aid, and for this particular purpose there is probably nothing better at present than the compound tincture of iodine.

Under the head of operative treatment there are three measures which require consideration,—namely, Cripp's and Kraske's operations and their modifications, and colotomy. The first is particularly adapted for cases in which the disease is limited to the first five inches of the bowel. It consists briefly in dividing both sphincters and rectum as high as the tip of the coccyx, and then dissecting out the growth or diseased tissues.

Judging from a limited experience, this is a very satisfactory operation. The dangers are shock and hemorrhage. Gay has never seen incontinence of gas or feces to a troublesome degree follow this operation. It is especially indicated for the removal of growths which are limited in extent, movable, and not located over the urethra and prostate.

Kraske's operation is designed for the removal of growths located higher up than five inches, or above the reach of the finger. The sphincters are not divided. The bowel is

reached through an incision over the sacrum and coccyx. The latter bone and a portion of the former is removed. The gut is divided above and below the diseased portion, the latter is removed, and the ends of the healthy bowel are joined with sutures or fastened in the wound, as the condition requires.

The peritoneal cavity is usually opened in this operation, thereby adding another element of danger from extravasation of fæces.

Finally, we come to the most satisfactory operation for the relief of the majority of cases,—colotomy. This is now most frequently done in the left inguinal region, for the reason that the operation is more quickly and easily performed, the wound can be attended to far better by the patient, and the danger is no greater than in the loin. The relief to the obstructive pain or colic is usually complete and permanent. The pressure-pain may still require opiates or other treatment. Many lives are prolonged, and, more than that, they are made comparatively comfortable by this operation. In most cases the patient can keep himself clean and free from odor. A woman upon whom Dr. Bradford performed right lumbar colotomy worked for many months alongside another woman, without the latter ever suspecting that anything was the matter with her companion.

Kelsey's description of the operation is the best one. The incision parallel with Poupart's ligament is made about an inch from the left anterior superior spine. The peritoneal cavity is opened and the colon brought out of the wound. The "bar" is made by joining the edges of the incision with a silver wire passed underneath the bowel. The intestine is then joined to the edges of the wound with sutures, and two or three days allowed to elapse before the bowel is opened. The operation is neither difficult nor dangerous, and in very many cases it is a most satisfactory one to both patient and surgeon.

By way of recapitulation, it may be said that the treatment of malignant disease of the rectum is essentially palliative. Colotomy is indicated to relieve obstructive colic, and it should be done early in order to save the patient's strength. The radical operations are indicated in the early stage, when the growth is limited in extent, free from deep adhesions and infiltration, and not infringing upon the urethra or prostate. Opium is to be avoided as long as possible, and given judiciously, in order that its beneficial effects may not be lost by overdoses before the time comes when it is needed the most. While the disease is incurable,

very much can be done by judicious management to make the patient's life endurable and his death peaceful and easy.

#### *SINGLE LIGATION OF THE CORD IN OBSTETRIC PRACTICE.*

According to the *Boston Medical and Surgical Journal* of March 1, 1894, NGUYEN KHAC CAN bases his opinion of the superiority of a single ligation upon his observation that out of sixty-eight cases of labor with double ligation of the cord, there were four cases of retention of the placenta, and out of one hundred and forty-six cases with single ligation, only two cases of retention. The duration of the third stage with the double ligation averaged sixty-four minutes, while with the single it was but twenty-seven minutes.

The author believes that a rapid diminution in the size of the placenta, due to the free escape of the intraplacental blood, favors retroplacental hemorrhage and consequent complete separation of the placenta, and that it further lessens the obstacle to its escape from the uterus and vagina by the resulting decrease in size. He recommends that double ligation of the cord should be reserved for cases of twin pregnancy. While we think that there is a question as to the correctness of the author's reasoning on the first point, there can be no doubt as to the advantage of diminishing the size of any body which is to pass the os uteri, and we have ourselves noticed a greater ease of delivery of the placenta in cases in which but one ligation had been applied.

The suggestion of Nguyen Khac Can is certainly of value. It should be easy to prevent untidiness by catching all the intraplacental blood in a suitable basin, but the determination not to check intraplacental hemorrhage, of course, implies a careful palpation of the uterus before the cord is cut, and an absolutely positive elimination of the possibility of a twin pregnancy.

#### *THE RADICAL CURE OF HYDROCELE.*

In the *Boston Medical and Surgical Journal* of March 1, 1894, GARVIN writes on this subject. He asserts that the different methods used for the radical cure of hydrocele are antiseptic incision, excision of a part or the whole of the sac, and injection; all other methods are now obsolete. It is with the last-mentioned method that this paper has to deal. The open incision, with or without excision of the sac, means the administration of an anæsthetic, detention in bed for a varying period from

week to four, while to undergo an operation has considerable effect on the minds of most of our patients.

There are cases where the open incision is the only operation to be considered: where there is a question of diagnosis; where a hernia exists; where injection has failed,—congenital hydrocele; where the sac is much thickened. In all of these some form of open operation is called for.

There is a large class that can be successfully treated by injection. Perhaps it is well to inquire why injection has so often failed to cure the disease.

Let us hear the explanation as given by Jacobson for the many failures: (1) The use of too weak a solution; (2) not bringing the solution in contact with the whole of the sac; (3) not withdrawing all the hydrocele fluid; (4) injecting large hydroceles immediately after they are emptied; (5) making use of injections in unsuitable cases.

No simple, uncomplicated case of hydrocele ought to be treated other than by injection. The use of tincture of iodine, the simple as well as the compound, is too often followed by failure to urge its use, which is often attended by a scene, patients often fainting and suffering from griping pains, retraction of the testicle, nausea, and even vomiting; unpleasant things to have happen in one's office. Since about six years the writer has treated all suitable cases of hydrocele by injecting half an ounce of a solution composed of equal parts of carbolic acid, alcohol, and glycerin; a small bulb syringe answers very well. A little care is necessary in the use of the solution. Protect the skin surrounding the canula with a little gauze or absorbent cotton, so as to avoid the burning sensation so easily produced on the tender skin covering the scrotum; allow the fluid to remain. The injection is practically painless, and no unpleasant effects follow its use. Patients are allowed to attend to their ordinary business, and in from two to four weeks the acute hydrocele disappears. Since using this method the writer has seen only one case relapse. The method has proved so effective, and with none of the drawbacks of other methods, that he brings it forward. He has never employed carbolic acid, as recommended by Dr. Levis.

#### TREATMENT OF ITCHING.

In a paper on this subject, BRONSON says of those drugs which give relief by acting as *sensory stimulants*, that the kind of stimulation which it is intended by these to effect is not of

that general character which simply augments the common irritability of the skin, but it tends rather to enhance its higher and perceptive sensibilities. By its action the function of the sensory nerves is so improved that sensations of contact or temperature, which through obstruction are exaggerated into the fret of itching, find freer channels of escape and a more normal interpretation in the sensorium. It is more especially in such forms of pruritus as are associated with hypopselaphesia as a predisposing cause—as, for example, in pruritus senilis—that remedies of this class are indicated. An example of this kind of stimulation has already been alluded to in speaking of the mechanical modes of relief that may be substituted for scratching. It probably constitutes an incidental effect in the action of various antipruritic remedies more properly belonging to other classes. There is one, however, that would seem to legitimately belong here,—namely, electricity, whether in the form of galvanism or faradism. Under one form or the other, this agent has sometimes proved to be of decided benefit. Perhaps the most effective agents of this class are those that act upon the nervous centres. Thus, strychnine, in those cases of pruritus which we may call atonic, is a remedy of value. Cannabis indica, which is a decided stimulant to the nervous centres and the higher sensibilities, may owe its efficacy in this disease quite as much to this fact as to any anæsthetic effect upon the commoner sensation of the skin. Its action in pruritus, therefore, would be analogous to that which has given it its reputation as a remedy for sexual impotence.

We have seen that a frequent cause of cutaneous pruritus is reflex irritation. Herein is discovered another factor in the *indicatio morbi*. Reflect the irritation back to its original source, or taking the initiative as aggressor, invade some inoffensive region that may be made to sympathize with the skin and make it bear a part of the skin's burden. It suggests our fourth class of remedies.

Of the *substitutive irritants*, the rationale of the good effect often witnessed in cutaneous irritations from cathartics, hepatic stimulants, and diuretics is that by these means a remote disturbance is created into which is diverted a portion of the cutaneous excitement. It is a method of treatment that can seldom be spared, and the aid thence derived may make all the difference between success and failure of local and more direct measures. But in pruritus the sympathetic substitution is not always effected between the skin and a remote or interior part,

but between different portions of the tegumentary surface, and, what is more, between different kinds of sensation in the skin. Pain is antipathic to pruritus, and one may be substituted for the other. The effect of smarting or stinging applications in relieving pruritus is thus explained. It doubtless explains part of the effect of thymol, chloroform, hot water, and other burning or pungent applications. It is analogous to the action of the "sensory stimulants" described above, where tactile impressions, which, on account of the impaired or occluded media, tend to degenerate towards common sensation, are deflected into the channels of higher special sense. A similar interchange occurs, as we have already seen, between the contact sense and the sense of temperature. Both cold and heat beyond a certain point annul the sensation of itching. Slight changes in temperature often evoke it, but so long as the sense of temperature remains at all noticeably affected, it dominates the itching, which, for the time being at least, remains in abeyance. We sometimes avail ourselves of this substitutive action by using cold applications, but the stimulation which these cause is apt to aggravate the pruritic excitement afterwards. But a remedy which is one of the best palliatives of itching that we have, and which is especially noteworthy in this place, is menthol, together with the peppermint preparations generally.

Menthol is commonly referred to as an anæsthetic, but it relieves itching as it relieves pain, not by direct inhibitory action on the molecular movements of the sensory nerves, as do the true anæsthetics, but chiefly, if not solely, through substituting an exaggerated temperature sense for the perturbed sense of contact, or for the sensation of pain. Goldscheider, who has carefully investigated this subject, attributes the sense of coolness that follows the application to the skin of menthol or other peppermint preparation to a specific action on the special nerves of temperature, causing what is virtually a hyperæsthesia of the temperature sense. He also found incidentally that when a portion of the skin—as, for example, the forehead—had been rendered insensible to cold by application of ice and then afterwards mentholized, the sensations of burning, pins and needles, and the like, which the cold produced, remained unaffected in spite of the menthol, from which it is inferred that the latter is not a true anæsthetic. Of its antipruritic virtues there can be no question. It is usually employed in alcoholic solutions (5 to 10 grains to 1 ounce) and may be used in

ointment. It is also with advantage combined with salol or thymol.

A fifth class of remedies often indicated in pruritus essentialis may be designated as follows:

Of the *alteratives of cutaneous nutrition*, he says they include not only absorbent and antiscatarrhal remedies to remove the products and curtail the processes of incidental inflammations which may act as contributory causes of the itching, but such agents as tend to control blood-supply and overcome hyperæmia. In this way act diaphoretics, and possibly diuretics, as well as by their substitutive and eliminative or depurative action. Thus, it is probable that jaborandi, which is extolled by so many writers for its efficacy in this disease, acts in all three ways. It determines excitement to the secretory instead of the sensory organs of the skin; it promotes the elimination of noxious matters which are irritants to the nerves; and, finally, the diaphoresis depletes the blood-vessels. This drug is especially useful when the skin is hot and dry, and where it has become the depot of noxious materials deposited from the blood,—as, for example, in the itching of icterus.

The local remedies belonging to this class include certain resinous or tarry substances, which are especially indicated in associated catarrhal conditions and have a certain controlling effect upon hyperæmia. Such are ichthyol (five to ten per cent.), tumenol (twenty-five per cent. or pure), occasionally tar, resorcin (three per cent.), and benzoic acid or benzoïn.

When considering the etiology of pruritus, one of the incidental causes of the deranged function of the sensory nerves is ascribed to a condition of impaired nutrition in the skin with defective metabolism. In a condition such as this it is a commonly-accepted opinion that agents which promote oxidation are especially indicated. Now it is a significant fact that a large proportion of the remedies that allay itching are oxidizing agents; while, on the other hand, a reducing agent rarely, if ever, has any direct antipruritic effect. It is the keratolytic substances, which are also, as a rule, oxidizing agents, from which we largely select our antipruritic remedies. Such are the whole group of antiseptics, the mineral and vegetable acids, and also the alkalis. The oxidizing effect may in many instances be subordinate to other actions they possess, but a property common to them all can hardly fail to have some therapeutic significance.

Led by these considerations, it seemed

author that the solution of hydrogen peroxide should be an appropriate remedy for pruritus, and he has had abundant verification of this fact in the last few years. It may be used as a toilet wash two or three times a day. In place of this, and perhaps with equal benefit, he has used an aqueous solution of ozone, known commercially by the hybrid name "aquozone."

The final indication for treatment which the etiology suggests relates to the hyperkinesis of the *erectores pilorum* muscles. Inasmuch as the spasm affecting these muscles is always secondary to some other condition, measures which relieve the latter will generally be the ones best calculated to dispose of the former, and ordinarily no more special treatment of this contributory factor is needed. But to be complete, our classification of remedies should embrace one more class.

Among the internal remedies, useful motor depressants are gelsemium and *jaborandi*, and it is very possible that to this fact they owe in some measure their antipruritic effects. Another remedy which, though recommended more especially in urticaria, should be mentioned here is atropine. It is probable that the good effect of this drug in urticaria, when used in full doses, such as are always required to produce this effect (from  $\frac{1}{16}$  grain upward), is due not to the primary, but to its secondary, action. The primary action attendant upon the smaller doses tends to excite muscular contractions and cause increased vascular tension. In its secondary action its effect is just the contrary of this: the muscles relax, the vessels are dilated. It is doubtless through release of tension in the cutaneous muscles that this drug acts so favorably in the urticarial hyperkinesis.

Of the local remedies belonging to this class, the first place unquestionably belongs to the hot-water applications. Here, also, might perhaps be included certain local sedative remedies, such as hydrocyanic acid, the cyanide of potassium, conium juice, tincture of arnica, and chloroform, all of which are decided depressants of motor action.

Having thus in a general way met the various indications for treatment in pruritus essentialis, it remains to briefly apply the therapeutic principles laid down to certain special forms of the disease. It must be confessed that, however clear these principles may appear in the abstract, to apply them in the concrete—i.e., to individual cases—is not always easy. Often, and in large degree, we must rely on empiricism in its better sense. To

know the rationale of things is most desirable, but in practice experience is often truer than theory.

Thus, in pruritus senilis, while theory suggests more especially the sensory stimulants described under C, so complex often are the morbid conditions involved in this form of the disease that recourse must be had to remedies of very diverse nature. In some respects theory and experience here correspond. The successful employment of faradism in senile pruritus, that has received abundant testimony, is scarcely susceptible of any better explanation than that afforded by the theory of its restoring or stimulating an impaired sensory function. It by no means always succeeds, but in uncomplicated cases it rarely fails of good effect if persisted in. It has seemed to the writer that it was often effective when applied only to the spine and not directly to the pruritic surfaces. It is best administered by means of a brush electrode. The cold douche is another remedy in the same line that is sometimes of benefit, and is best used in the morning. In one or two cases patients have assured him that prolonged relief was obtained by certain frictions of the skin at night, as with the rough mitten sometimes used in bathing. Such a remedy, however, could rarely be recommended as a safe one. For internal use the strychnine and *cannabis indica*, which are stimulants to the nerve-centres, are appropriate remedies, and have already been referred to. The tincture of *cannabis indica* may be given in doses gradually increased from 10 drops to 1 scruple or  $\frac{1}{2}$  drachm, three times a day, unless it should disturb the digestion. The *indicatio causalis* in this disease opens a wide field for therapeutic measures. Those included in the class of "alterations of cutaneous nutrition" are particularly important. Internally, antilithic remedies—alkalies, diuretics, and cholagogue cathartics—are required to meet special indications. Locally, we may employ the alkaline baths, the hydrogen peroxide, and the oxidizing substances of the antiseptic group. Nor can the sedative applications be dispensed with. Which one will answer best can often only be determined by trial. A ten-per-cent. solution of salol in benzoinol is of some use; the carbolic oil mentioned above is more powerfully antipruritic, but requires caution. It is best suited to limited areas of itching. Menthol also acts admirably in many cases, either alone or, what is better, in combination with some emollient substance. If too strongly or too frequently applied, it is liable, like carbolic acid, to irritate, and thus



render the skin more sensitive. A remedy highly extolled by the English is liquor carbonis detergens (a three-per-cent. solution in water).

In pruritus hiemalis an all-important measure of treatment is protection against cold. The sole cause of winter pruritus, aside from a special predisposing hyperæsthesia, is lowered temperature. The first cold day evokes it, and, after raging through a succession of cool days, the first warm day will make it disappear till again the weather changes. The temperature effect may be forestalled to a certain extent by protecting clothing. A minor point, though by no means an unimportant one, is, that in making changes of clothing, the undergarment should remain as light as that worn during the warmer weather. If wool is required, it should be worn outside this thin undergarment. Sometimes it is well to bandage the legs (where the trouble is always worst), at least for the latter part of the day. At night a wet pack for this portion of the body often gives much relief. A five-per-cent. salol superfatted (Eichhoff's) soap may be moistened and smeared over the itching surfaces, where it is allowed to dry on. The surest relief when the itching areas are of limited extent (and such often is the case) is afforded by the antipruritic oil mentioned above. Each morning care should be taken to dress any excoriated or inflamed spots, due to scratching, with some healing, emollient application, such as the Lassar paste. Otherwise there is much danger of eczema being developed. Indeed, it is possible that a large proportion of the chronic eczemas of the legs owe their first inception to this very cause,—i.e., the scratching occasioned by pruritus hiemalis.

In pruritus of the genito-anal region, while all possible is being done to remove or abate any accidental cause which may be discovered, the choice of direct antipruritic remedies will depend much on the nature and complications of the case. Special treatment is required for cases associated with eczema or other inflammatory disease. For the itching, perhaps no remedy is more generally useful than hot water. The patient squats over a vessel in which there is water as hot as the hand can bear, and after a little the temperature can be tolerated still higher. With a handkerchief held as a swab between the fingers, the water is sopped on for a period of three or four minutes. The part is then gently dried with a soft cloth and well powdered with talc or other inert substance. In all of the forms of pruritus in this region carbolic acid is of very great value; but, as al-

ready intimated, to be of much avail it must be used strong. The above-mentioned oil is especially useful in these regional forms, but should not be used too frequently nor where much inflammation prevails. Menthol in a thin ointment (5 to 10 grains to 1 ounce), or the peppermint-water, is also extremely useful, and salol may be added with advantage. All of them should be followed by copious applications of a soothing powder. In some cases, more especially where the parts are sore or abraded from long scratching or rubbing, the greatest relief will be afforded by cocaine, whether in a four-per-cent. watery solution or, what is better, in some soothing emulsion or thin ointment.

For pruritus vulvæ some of the special remedies advised are painting the parts every night with compound tincture of benzoin, or, in some cases where the surface is thickened from long irritation, occasionally touching the affected region with a rather strong solution of nitrate of silver (1 scruple in 1 ounce of water). Many authorities have advised applications of corrosive sublimate ( $\frac{1}{4}$  to 1 grain in 1 ounce of water), or the following prescription, recommended by Bartholow, will sometimes be found useful:

R Hydrarg. chlor. corros., 1 part;  
Alum, 20 parts;  
Starch, 100 parts;  
Water, 2500 parts.

When the itching affects the mucous membrane it can generally be relieved by cocaine.

For pruritus scroti, Crocker advises painting the part with a solution of silver nitrate (10 grains to 1 ounce) in sweet spirits of nitre. In inveterate cases he has sometimes employed, with considerable success, a method of treatment first suggested by Vidal. It consists in scarifying the entire itching and usually thickened surface with Squire's scarifier or an ordinary scalpel. The incision need not go much beyond the epidermis. But there is an advantage in drawing a little blood. Afterwards the part is dressed with a thin layer of Lassar paste, which may contain a little cocaine. The layer should be thin, for it is a fact of common experience that ointments are rarely well borne in pruritic affections of the genito-anal region.

The remedies most useful in pruritus ani are the same generally as those for the vulvar and scrotal forms. Sometimes relief can be obtained here only through substitutive irritants. A liniment containing chloroform or camphor in sufficient strength to cause considerable

smarting will occasionally give relief to the intense itching which can be secured in no other way. A method suggested by Allingham would perhaps belong more properly to the class of sensory stimulants. A bone plug an inch and a half long and about as big in diameter as the end of the forefinger is slipped into the anus on retiring, and retained in position through the night by means of a compress.

#### PERMANGANATE OF POTASSIUM AS AN ANTIDOTE TO MORPHINE.

In the February number of the *THERAPEUTIC GAZETTE* there was a short leading article upon the use of permanganate of potassium as an antidote for morphine. Since that time Dr. MOORE has published his studies concerning this matter in the *Medical Record* of February 17. The results obtained by him are of very considerable interest and may be summarized as follows:

In case of poisoning by any of the salts of morphine, 10 or 15 grains of the antidote dissolved in 6 or 8 ounces of water should be administered at once, and repeated at intervals of thirty minutes, three or four times, or even more often. Permanganate of potassium, as well as the salts of manganese, are comparatively harmless, even if given in large quantities. Moore has poured into the stomach of a rabbit weighing four pounds a solution of 5 grains of permanganate of potassium in 2 ounces of water, and one hour later 2 grains more dissolved in 1 ounce of water, without noticing any toxic effects whatever. One ounce of the sulphate of manganous oxide has caused only brisk catharsis (Dr. Thompson).

In cases of poisoning by the alkaloid itself or by tincture of opium (*laudanum*), also by opium, it is advisable to acidulate the antidotal solution with diluted sulphuric acid, or, in the absence of this, with some white vinegar (not red vinegar), by which the insoluble morphine will be at once converted into the soluble sulphate or acetate.

The author believes that the administration of permanganate will be of beneficial effect even after absorption of the morphine has taken place. This statement he bases on the following:

Professor Edward Hitzig, of Halle, two years ago, proved beyond a doubt that morphine which was injected subcutaneously into dogs was secreted by the glandular lining of the stomach. Hitzig succeeded, by washing out the stomachs of animals that had received morphine subcutaneously, in obtaining fully

one-half of the injected amount during the first hour after the injection. It is therefore a logical necessity that an antidote which acts instantaneously must destroy in the stomach a certain amount of poison that got into the circulation either through hypodermic injection or through absorption by the stomach, for it is evident that the same circulation which conveys a poison from the peripheral parts of the body to the stomach must also bring back to the latter a part of the poison which previously was absorbed by it. The writer has obtained some highly encouraging results from experiments on rabbits. As to the effect of permanganate of potassium upon other alkaloids, he briefly enumerates the results he has obtained.

*Atropine*.—1 grain of sulphate of atropine dissolved in 1 ounce of water, added to 1 grain of permanganate of potassium in  $\frac{1}{2}$  ounce of water. Color, purple, as if the solution contained only permanganate of potassium. After four hours, color still purple, no change from original permanganate color; 1 drop instilled into a person's eyes widely dilates the pupils in a few moments, mydriasis lasting over twenty-four hours. After eight hours, color dark red, taste intensely bitter; addition of sulphate of morphine gives the characteristic reaction (dark precipitate, colorless liquid above it). After twenty hours, color dark brown, taste intensely bitter; addition of morphine gives the characteristic reaction. Thus, permanganate of potassium has practically no effect upon atropine.

*Cocaine*.—1 grain of cocaine muriat. to 1 ounce of water, added to 1 grain of permanganate of potassium in  $\frac{1}{2}$  ounce of water. Color, purple, as if the solution contained only  $Mn_2O_4K_2$ .

Four hours later, color dark red, taste intensely bitter; 1 drop instilled into a person's eye causes decided mydriasis, lasting half an hour; addition of morphine gives the characteristic reaction. Eight hours later, color grayish red, taste bitter; applied to the pharynx, distinct difficulty in swallowing noticeable; dark precipitate on the addition of morphine. Practically no effect on cocaine.

*Veratrine*.—2 grains of veratrine muriat. to  $\frac{1}{2}$  ounce of water, added to 2 grains of permanganate of potassium in 1 ounce of water. Color, purple; ten minutes later, purplish red; fifteen minutes later, dark brown; precipitate on addition of acetate of morphine; thirty-five minutes later, precipitate with brownish liquid above, the latter turning light on the addition of acetate of morphine, and if applied to the nasal mucous

membrane causing violent sneezing (one of the characteristics of veratrine). Useless in veratrine-poisoning.

*Pilocarpine*.—2 grains of pilocarpine muriat. to 2 ounces of water, added to 2 grains of permanganate of potassium in 1 ounce of water. Color, purple; after, five minutes, still purple; after forty minutes, carmine.

After seventy minutes, color carmine; 1 drachm injected subcutaneously into a rabbit causes lachrymation, salivation, profuse perspiration, irregular rapid breathing (160), three or four copious watery discharges.

After three hours, color still red; addition of morphine gives the usual reaction. Practically without effect on pilocarpine.

*Aconitine*.—2 grains of aconitine to 2 ounces of water, added to 2 grains of permanganate of potassium to 1 ounce of water. Color, purple. After stirring for two minutes, same color.

After two hours, color unchanged;  $\frac{1}{2}$  drachm (2 cubic centimetres) injected into a full-grown rabbit; animal restless in a few moments, turns his head to the side, makes rapid swallowing motions, salivates, is evidently nauseated; difficult, irregular breathing, tremor, opisthotonos; animal lies on its side, apparently *in extremis*, but after ninety minutes symptoms begin to abate.

After twenty-four hours, color still reddish purple. Dark precipitate by addition of morphine. No effect on aconitine.

*Strychnine*.—1 grain of strychn. sulphat. to 1 ounce of water, added to 1 grain of permanganate of potassium to  $\frac{1}{2}$  ounce of water. Color, purple; after five minutes, red; after fifteen minutes, dark brown, intensely bitter; after thirty minutes, same color, taste intensely bitter. Addition of morphine, black precipitate, colorless liquid above.

This treatment could not be depended upon in strychnine-poisoning, if the stomach should contain organic matter, which is the rule.

#### DIGITALIS AND ACONITE IN INFLUENZA.

BURTON contributes to the *Medical Press and Circular* of January 31, 1894, a paper upon this subject, in which he states that the following rules of treatment should be carefully followed. He claims that it is the result of his experience in eight hundred cases of influenza treated during the recent epidemics.

In the treatment of typical or, indeed, any form of influenza, the patient should be iso-

lated, preferably in a darkened room sufficiently airy. The room temperature should be maintained at from 63° to 65° F. The bed-clothes should consist of sheet and blankets, no counterpane, and should be graduated in thickness inversely to patient's temperature. Patient's feelings may be considered to some extent on this point, but it is well to remember that the feeling of chilliness which often accompanies very high temperatures is relieved by cooling the surface. It is common to find a patient with a temperature of over 103° F. or 104° F., and rising, covered with a sheet, three or four blankets, a cotton counterpane, and an eider-down quilt.

From the first the patient must be saved all possible exertion; this point is of the utmost importance during treatment.

The horizontal position should be insisted on, and when it becomes necessary to raise the patient to a sitting posture, this should be done deliberately and gently.

The feet should be frequently examined by the nurse, as they are often cold at first, even when the temperature by the mouth is high.

From the first the diet should consist of cold milk, plain or mixed with an equal quantity of barley or soda-water. Beef-tea and other meat infusions are discarded as useless during the pyrexial stage. Plain boiled water may also be taken cold at intervals, but this should not take the place of milk. After the pyrexial stage alcoholic stimulants are most useful. Alcohol distinctly antagonizes the slowing effect of the remedies on the heart's action, and so materially retards the antifebrile influence of the aconite and digitalis.

The patient should be kept free from all excitement, and should be spoken to as seldom and as little as possible.

After placing the patient in bed the following mixture is given:

R Tinct. digitalis,  $\mathfrak{m}\text{x}$ ;  
Tinct. aconiti,  $\mathfrak{m}\text{iiss}$ ;  
Liq. ammon. acetat.,  $\mathfrak{f}\mathfrak{z}\text{iiss}$ ;  
Aque, ad  $\mathfrak{f}\mathfrak{z}\text{viii}$ . M.

Sig.—1 tablespoonful to be taken directly, and repeated every hour until four doses have been taken; then every two, three, or four hours, as directed.

If there be a marked and pretty rapid temperature fall (say from 104° to 102° F. in the first four hours) it may not be necessary to give the fifth dose until three or four hours after the fourth. In deciding this point, regard must be had to the effect of the drugs upon the heart's action, which should have been carefully examined in the first instance. As a rule, it is

advantageous to push the digitalis steadily, every two hours, after the fourth dose has been taken, until the temperature has fallen to 99.4° or 99° F., when it should be discontinued. Under this treatment the temperature falls, in the great majority of cases, to 99° F. or lower within twelve hours from the time the first dose is taken, and does not rise again above normal. Frequently it reaches normal or lower in six hours or less. In one typical case—*i.e.*, without discoverable complications—the patient (a robust, healthy man, aged twenty-three) had his temperature reduced from 105.6° F. in seven hours. He had been taking (owing to the culpable negligence of the attendant) double the dose prescribed (or 20 minims of digitalis with 5 minims of tinct. aconite) every hour. This patient felt well but weak after the seventh dose, and recovered quickly.

*OUR PRESENT KNOWLEDGE OF THE  
CURE OF MALARIA BY MEANS  
OF QUININE.*

PROFESSOR C. BINZ (*Cent. f. die Med. Wissen.*, No. 2, 1894) states that just twenty-six years ago he opposed, in the pages of the *Centralblatt*, the then generally-accepted theory that the curative action of quinine in malaria is developed through the nervous system, and propounded the theory that quinine in all probability acts as a protoplasm poison on the pathogenic micro-organism, at that time undiscovered, which is at the root of all paludism. It has now been discovered that all forms of malarial fever are brought about by organisms of the genus *amœba*, which penetrate the bodies of the red blood-cells, at whose expense they increase in size, finally sporulating and destroying their host. Laveran, who first discovered and described the parasite of tertian ague, also investigated the action of quinine on that organism, and found that when microscopical preparations of the parasite were treated with quinine, the vitality of the disease-germ was speedily destroyed, a fact which has been substantiated by Marchiafava, Celli, Grassi, and Feletti. The influence of quinine on the malaria parasites has also been studied by examining the blood of malaria patients before and after the exhibition of the drug. In this instance the investigations of Laveran, Romanoffsky, Bacelli, Golgi, Marchiafava, and Bignani established the fact that the parasites were killed by the quinine absorbed into the blood.

Dr. Mannaberg, who has recently investigated this question in the malarial districts of Dalmatia, Istria, etc., finds, among other

things, that about three hours after the exhibition of from 7 to 15 grains of quinine, the amœboid movements of the amœboid form of the parasite of tertian ague slacken to a very perceptible degree, and that after a lapse of a further period of three to six hours, the number of parasites in the blood of the patient greatly diminishes, while many of those still left are torn and mutilated. On the full-grown parasite of tertian ague quinine either produces a complete cessation of all movement in the pigment, whereby the parasite acquires a glittering, cloddy appearance, as though coagulation had set in, or else dropsical swelling is set up, or, finally, the parasite falls to pieces. Shortly after the exhibition of quinine, medium-sized parasites of tertian ague develop intense activity. It appears that quinine possesses a stimulating action before causing coagulation and immobility. This phenomenon has also been observed by Bacelli. According to Golgi, the medium-sized parasites of quartan fever acquire a glittering appearance and tendency to shrivel when the patient receives quinine internally; the large forms, however, become distended, their pigment exhibits lively oscillatory movements, and they frequently contain vacuolæ or abortive spores.

About three hours after the exhibition of a dose of 7½ grains of quinine, the nucleoli of some of the amœbæ of the milder forms of true quartan had either partially or entirely lost their tinctorial characteristics. After twelve hours of the treatment stainable nucleoli were hardly met with at all, most of the parasites having broken up into irregular fragments.

From these and other experiments it is evident that the amœba of malaria is not only visibly enfeebled by the presence of quinine in the blood, but that its capacity for producing viable spores is greatly diminished.

In those forms of malaria which are not curable by quinine that drug has no effect whatever on the parasites present in the blood. Bacelli, however, has found that many such severe forms which defy the ordinary method of treatment may be speedily cured by injecting the usual dose of quinine into a vein.

In spite of certain differences on minor points, Mannaberg and the other investigators one and all agree that quinine is a direct poison for the malaria parasite, and that the therapeutic doses employed are non-injurious to the cells of the human organism. Any assistance from the nervous system in the process of cure is neither evident nor necessary.

With regard to the prophylactic action of quinine, it is to be noted that the drug disap-

pears very gradually from the blood and in an almost unaltered condition. By this means any young amœbæ and spores are kept in constant contact with the drug and are thereby checked in their further development. As to the part played by the leucocytes, it appears that phagocytism is prominent in cases of spontaneous cure of malaria, but not when quinine is employed.—*Provincial Medical Journal*, March 1, 1894.

#### ON MEAT DIET FOR GOUT.

From time immemorial excessive meat eating has been considered the chief cause of gout. As medical experience corroborates this view, until quite recently gouty subjects were advised to reduce their consumption of meat to the smallest possible quantity; but a few years ago Dr. Emil Pfeiffer advocated the contrary system, and based his conclusions on the quantity of uric acid observed in the case of five healthy and six gouty persons subjected to the particular diet prescribed by him. According to Pfeiffer, this diet consisted chiefly of albuminous substances, such as meat and eggs, and also of fat and green vegetables, while carbohydrates, more especially starch and sugar, were scrupulously avoided; and analysis proved that the secretion of urea and uric acid was increased and the fluids of the body rendered as alkaline as possible. Pfeiffer concluded from the results of the analyses in these eleven cases that healthy individuals excrete more uric acid than gouty patients; but all his subsequent investigations, as well as about two hundred determinations of the uric acid excreted by one of Mordhorst's patients, gave a contrary result. (The uric acid was determined according to Heintz's method.) As a matter of fact, sufferers from gout excrete, on an average, more uric acid than healthy persons, and a strictly meat diet, so far from rendering the fluids circulating in the body more alkaline, has the opposite effect. It is a well-known fact that the power possessed by a fluid for dissolving uric acid depends upon its alkalinity. Unfortunately, although we can readily render the urine alkaline, it is extremely difficult to render those tissues which are predisposed to the deposition of uric-acid deposits neutral, much less alkaline. The urine of a puppy receiving a daily ration of a couple of rolls and about eight ounces of milk is invariably slightly alkaline, whereas that of a similar puppy, only receiving meat as well as milk, never gives anything but a strong acid reaction.—DR. MORDHORST, in the *Provincial Medical Journal*, March 1, 1894.

#### VALERIANATE OF AMYL.

BLANC (*Rev. de Thérap. Méd.-Chir.*, December, 1893) describes valerianate of amyl, which is the odoriferous principle of the apple,—that is, the essence extracted by distillation together with alcohol. Cider has long been believed by the laity to have some effect on calculous formations, and this seems to be borne out by the fact that valerianate of amyl really has some solvent action on cholesterin. It is a colorless liquid, of pleasant taste when taken in small quantities, and can be prepared in the laboratory by the action of valerianic acid on amyl alcohol; 1 grain of cholesterin is dissolved by  $4\frac{1}{2}$  grains of valerianate at  $37^{\circ}\text{C}$ . and by 3 grains at  $40^{\circ}\text{C}$ . Physiologically the action resembles that of ether, but the special qualities lie in its being a stimulant and sedative to the liver in cases of hepatic colic. It not only immediately subdues the attack, but it prevents recurrences. If the stomach is irritable, it may be necessary first to employ sulphuric ether, following this with two to three capsules of fifteen centigrammes each, given every half-hour until the crisis is past, and continued at longer intervals during the following days. In nephritic colic the drug acts as an antispasmodic and general stimulant only, but no effect is produced on the renal calculi. Muscular rheumatism is frequently relieved, and much benefit is also derived from its use during menstrual uterine contractions. As a sedative, it is of value in hysterical manifestations. Its toxic properties being very slight, as many as five to six capsules can be taken daily, but it is necessary to guard against gastric disturbance.—*British Medical Journal*, March 10, 1894.

#### CHLORALOSE.

J. OHMJELEWSKI (*Medicinskoje Obosrenje*, No. 24, 1893) has tried chloralose in seventeen cases of mental disease, including simple and periodical mania, senile dementia, paranoia, melancholia agitata, etc. The drug was given in doses of from one-half to one grain. Sleep was induced, as a rule, in about forty minutes after administration, and lasted from four to ten hours. In three cases transient tremor of the upper limbs was observed before the patient fell asleep. In five cases considerable perspiration occurred. No ill effects as regards the gastro-intestinal canal were noticed. In two cases considerable excitement followed the administration of the drug. On the whole, the author looks upon chloralose as a valuable remedy in cases of mental disease, and one

especially likely to be useful where chloral and sulphonal are contraindicated.—*British Medical Journal*, March 10, 1894.

#### MASSAGE IN PRURIGO.

MURRAY, of Stockholm, found (*Hygiea*, 1889) that massage had a good effect in a case of prurigo in a boy aged eleven; the procedure had no effect on the process, but relieved the distressing itching. HATSCHEK (*Arch. f. Derm. u. Syph.*, xxv., Jahrg., 1893, Heft vi. p. 931) had the opportunity of trying the method in Kaposi's clinic in eleven cases (nine males, two females). Of these, seven were suffering from prurigo ferox, four from prurigo mitis. Most of them were young (fourteen to twenty-one years of age), but one was aged sixty-two. Nine were treated exclusively by massage; in two cases this was for a time supplemented by carbolic-acid pills. To exclude sources of fallacy, dry massage was used in the form of simple effleurage. Stroking was moderately firm, and was made in a centripetal direction. The duration of each sitting was at first ten to fifteen minutes; after a time this was shortened to five and later to three minutes. In all the cases itching was markedly relieved; in some after two or three sittings, in others not till after some weeks. It is pointed out that the rapidity of the effect bore no relation to the severity of the symptoms. That treatment is more effectual if vaseline is employed. The method has no direct effect on the disease process, but it was noticed that new nodules, developing while the patient was under treatment, itched less than had formerly been the rule and rapidly disappeared. In some cases recurrence of the pruritus took place. To prevent this, massage must be continued to a greater or less extent throughout the patient's life. In other conditions, such as urticaria, psoriasis, etc., massage did no good, and sometimes seemed to do harm.—*British Medical Journal*, March 10, 1894.

#### FOR LARYNGEAL PHTHISIS WITH DYPHAGIA.

R Cocainæ hydrochloratis, gr. x;  
Acidi borici, gr. iv;  
Glycerini, m̄xv;  
Aquæ destillatæ, q. s. ad f̄i.  
Misce.

Sig.—To be applied to the throat when necessary.

—*Practitioner*, February, 1894.

#### ANTIPYRETIC PILLS IN PHTHISIS.

R Pulveris digitalis, gr. i;  
Quininae hydrochloratis, gr. iss;  
Pulveris opii, gr. ss.  
Misce et fiat pilula, No. i.  
Sig.—One to be given every six hours.

—*Practitioner*, February, 1894.

#### A TONIC MIXTURE.

R Wine of kola,  
Wine of cinchona,  
Wine of gentian,  
Wine of colomba, of each, ℥viii;  
Fowler's solution, gtt. x;  
Tincture of nux vomica, gtt. v.  
A wineglassful after each meal.

—*Journal de Médecine de Paris*, January 4, 1894.

#### THE ADMINISTRATION OF SALICYLIC ACID BY THE RECTUM.

The *Journal de Médecine de Paris* for January 4, 1894, recommends the employment of salicylate of sodium by injection into the rectum in those cases in which the stomach cannot stand the administration of the drug. The prescription given is as follows:

R Salicylate of sodium, gr. xxx to lx;  
Tincture of opium, gtt. xx;  
Distilled water, ℥iv.  
The injection is given preferably at night.

#### THE TREATMENT OF ECZEMA OF THE EAR.

A brief note in the *Journal de Médecine de Paris* for February 4, 1894, gives the following directions: In moist eczema of this region, where the eruption is confluent and behind the ear or in the auricle, it is well to wash the parts with a very weak solution of bichloride of mercury, which should be warm. This should be done three or four times daily. After the parts are thoroughly disinfected, they may be dressed by an application of iodol, the auditory canal being closed by a pledget of absorbent cotton. This treatment is very useful in those cases where a discharge from the middle ear has produced irritation. In dry eczema in this region we may also use the mild bichloride wash, and follow it by an ointment composed of,—

R Iodol, gr. xv;  
Lanolin, ℥i.

If the disease involves the external auditory canal, the desquamating epithelium should be

removed by some absorbent wool twisted upon an applicator, and the canal anointed by,—

R Iodol, gr. xv;  
Paraffin oil, ʒi.

The introduction of a tampon of wool will do much towards the keeping of the liquid in the canal. This dressing should be renewed night and morning. Often a cure results in a very few days.

#### WATER IN THE TREATMENT OF SCARLET FEVER.

DR. JOHN H. CARSLAW, of Glasgow, contributes an article "On the Severer Forms of Scarlet Fever, with Special Reference to Antipyretic Methods of Treatment" to the February number of the *Glasgow Medical Journal*.

"With regard to the external use of applications of cold and tepid water," he says, "I hope to have shown,—

"1. That in the large majority of cases they are not required.

"2. That even in simple cases and in anginous cases tepid spongings are useful in allaying restlessness and giving comfort; if the rash has not developed, the addition of mustard being an advantage.

"3. That mustard spongings are particularly useful during the earlier stages of an attack in which nervous phenomena are prominent.

"4. That for the hyperpyrexia of such (nervous) attacks, especially if the rash has developed, repeated cold wet packing is a convenient and efficacious method of treatment, general improvement often following its use.

"5. That local applications to the head may sometimes be of assistance.

"6. That in all cold applications there is need for the exercise of the greatest care."—*New York Medical Journal*, March 10, 1894.

#### ANTIPYRIN AS A LOCAL ANÆSTHETIC IN DISEASES OF THE NOSE AND THROAT.

In the *Gazeta Lekarska*, No. 41, 1893, p. 1067, DR. WROBLEWSKI, physician to the Szpital Ewangelicki, in Warsaw, draws attention to the excellent services obtained from antipyrin when applied locally in cases of painful affection of the nose, pharynx, and larynx, as well as in those of operations upon the organs. In the beginning of his experience with regard to the drug as a local anæsthetic, he used to paint the parts either with a strong aqueous solution of antipyrin or with

the following combination, which proved to be more efficacious:

R Antipyrini, mxxx;  
Cocaini muriatici, ʒi;  
Aque destillatæ, ʒiiss. M.

Later on, however, the writer arrived at the conclusion that parenchymatous injections of a fifty-per-cent. solution of pure antipyrin constituted a by far superior means for securing either therapeutical or surgical anæsthesia. At present, in surgical cases—such as tonsillotomy, excision of the lingual tonsil, galvano-cauterization of granulations on the posterior pharyngeal wall, curetting of the larynx for tuberculous lesions, etc.—he first paints the operation field with a ten-per-cent. solution of cocaine and then injects the antipyrin solution at two points, the total dose introduced at a sitting equalling from 3 to 6 grains (of the drug in substance). Invariably a complete local anæsthesia ensues in from ten to fifteen minutes, which lasts from eight to twelve hours.

Having practised the method in several scores of cases, Dr. Wroblewski did not meet a single instance of toxic or any unpleasant accessory effects from antipyrin, which circumstance he is inclined to attribute to his being cautious with regard to the dosage. Still, in view of certain untoward clinical facts published by other observers, he advises a special cautiousness when using the substance in children and the phthisical, and even to avoid antipyrin altogether in patients suffering from typhoid fever, cardiac or renal disease, arteriosclerosis, etc.—*Provincial Medical Journal*, March, 1894.

#### A PRESCRIPTION FOR DIABETES.

The *Journal de Médecine de Paris* for February 4, 1894, recommends the following:

R Nitrate of pilocarpine, gr. iii;  
Dilute alcohol, ʒi;  
Distilled water, ʒss.

4 or 5 drops of this mixture may be placed upon the tongue two or three times a day.

#### PILOCARPINE IN EAR-DISEASES.

At the recent Fifth General Meeting of Russian Physicians, DR. M. S. JIRMUNSKY, of St. Petersburg (*Vratch*, No. 3, 1894, p. 83), described his experience of the treatment of middle-ear- and labyrinth-affections by injections of pilocarpine. In twenty-seven cases of so-called dry catarrh of the middle ear, in two of

which the drug was injected under the skin and in twenty-five directly into the tympanic cavity, the therapeutic effects were practically *nil*. Similarly, no benefit whatever could be noticed in four cases of inveterate dry catarrh of the cavity with consecutive chronic labyrinthitis. On the other hand, in two recent cases of labyrinthine lesions the remedy proved of eminent service. One of them was that of a peasant lad of nineteen, who, immediately after a fall from a ladder, was brought to the hospital in an unconscious state and bleeding from the left ear. When examined on the thirteenth day, the patient (who had recovered his senses in about two hours after the accident) was found to be absolutely deaf on the left side, both the aerial and bone conductivity being totally destroyed (except the mastoid apex, on which area watch could be faintly heard). Traumatic labyrinthitis with extravasation into the tympanic cavity was diagnosed, and hypodermic injections of pilocarpine commenced without delay. The drug was injected once daily for nineteen consecutive days, beginning with  $\frac{1}{160}$  grain, and increasing the dose  $\frac{1}{160}$  grain every day until  $\frac{1}{8}$  grain was reached. From the sixth day air insufflations through a Eustachian catheter were added; besides, from 4 to 10 drops of a two-per-cent. solution of iodide of potassium were introduced into the tympanic cavity every other day. A steady and rapid improvement set in after the fifth pilocarpine injection. On examination after the nineteenth and last, the lad was found to distinctly hear watch both on the mastoid and auricle, whisper at the distance of 1.5 metres, and ordinary or conversational voice at three metres. The other case refers to a gentleman aged twenty-four, who had contracted syphilis in May, 1892, and undergone the usual treatment in due time. On November 15, 1893, he sought the author's advice on account of deafness, which had suddenly developed about two months previously. The examination elicited the following condition: In the left ear watch hearing = 0; whisper heard at ten centimetres, ordinary voice at 1.5 metres. In the right ear watch hearing normal; whisper at five centimetres, ordinary voice at one metre. Syphilitic labyrinthitis was diagnosed, and subcutaneous injections of pilocarpine in gradually ascending doses (from  $\frac{1}{160}$  to  $\frac{1}{8}$  grain) resorted to. After the tenth *séance* amelioration became marked. After the twenty-fourth the condition was as follows: Whisper, right ear = one metre; left = 1.5 metres; ordinary voice, right ear = four metres; left = four metres. The author feels justified in

laying down the following general propositions:

1. In recent cases of labyrinthine disease of any causation, subcutaneous injections of pilocarpine do actually produce beneficial effects. The earlier the treatment is commenced the better are the results secured.

2. As to inveterate labyrinthine lesions and dry catarrhs of the tympanic cavity, the injections—hypodermic and intratympanic alike—utterly fail to exercise any influence on the course of the disease.

During a discussion, DR. M. I. GORDON, of St. Petersburg, pointed out that he succeeded in obtaining good results from pilocarpine in several cases of dry catarrh of the middle ear in which the treatment had been commenced before a profound deterioration of the patient's hearing power.

PROFESSOR MIKHAIL M. LOMIKOVSKY, of Kharkov, observed that in his hands pilocarpine proved useless in cases of syphilitic deafness.—*Provincial Medical Journal*, March 1, 1894.

#### THE PRESENT POSITION OF THE CREOSOTE THERAPY OF TUBERCULOSIS.

DR. JULIUS WEISS (*Centralblatt für die Gesamte Therapie*, March, 1894) reviews this subject from the discovery of the antiseptic properties of creosote by P. Guttman, in 1887. In Professor Drasche's wards in the Vienna General Hospital he has had abundant opportunities to study the effects of creosote in tuberculosis. He maintains that creosote does not exercise a direct influence upon the tuberculous process. If such an influence existed, then injections into a tuberculous focus and inunctions would do most good. But the contrary is the fact, and its internal employment survives. Stoerk would discard its use altogether, believing that the lessened capacity of assimilation of phthisical patients is still further lowered by creosote. Weiss, however, says that in most cases during creosote treatment an increase in weight, lessening of cough, and improvement of appetite are observed. The last mentioned is the most striking change. Patients are often extremely hungry. This observation applies not only to patients with slight disease at the apex of the lung, but also to advanced cases with extensive infiltration. In a few cases it fails to act as a stomachic. The method of administration needs to be varied to suit the patient. If pill or capsules are not borne, try Hopman's mixture,—

Creosoti,  $\mathfrak{m}_{xlv}$ ;

Tinct. gentianæ,  $\mathfrak{m}_{cv}$ ;



or the formula of Bouchardat (with gentian and Malaga wine), or that of Van der Vloet, with nux vomica.

When creosote is not borne, carbonate of creosote, in proportionately larger dose, should have a trial. Weiss employs it in capsules. He does not think creosote favors hæmoptysis when too extensively used.

His conclusion is that creosote is not a direct specific against tuberculosis, but that it influences the process indirectly by lessening secretion and acting as a stomachic. It is the best remedy for the symptomatic treatment of phthisis which we possess at present.

#### *A CLINICAL, BACTERIOLOGICAL, AND THERAPEUTIC STUDY OF OCULAR DIPHTHERIA.*

GILBERT SOURDILLE, in concluding a work in the laboratory of Panas upon the subject stated in the title, comes to the following conclusions in regard to treatment: Although the therapeutic measures have been diverse, it is universally conceded that in diphtheritic conjunctivitis cauterization with nitrate of silver must be absolutely rejected. He believes, also, that in cases of croupal conjunctivitis in mild form nitrate of silver should not be used. He discards bloodletting,\* mercurial friction, and the internal administration of calomel, which he believes to be harmless in a patient already anæmic from infection. Fieuzal has rendered a real service in reviving an old remedy,—namely, lemon-juice,—which, although successful in some cases, has many failures to its credit. Sourdille recommends this drug, with the reservation that too much confidence must not be placed in it. Almost every antiseptic has been tried,—boracic acid, salicylic acid, phenic acid, sublimate, biniodide of mercury and salicylate of mercury, as well as the yellow oxide of mercury. It seems that such remedies should exercise a favorable influence upon a distinctly microbic disease, and yet they often have failed to produce good effects. Believing from bacteriological investigation that phenic acid in some way fulfils the indications most accurately, but that in previous times it has been used in too strong a lotion, the author recommends the following: Glycerin, 20 grammes; phenic acid, 2 grammes. He proceeds as follows: Reverse the eyelid and wash the conjunctiva with a jet of biniodide of mercury (1 to 20,000). Remove the false membrane wherever possible, and where this is not

possible, rub it with an alkaline solution,—borax or biborate of sodium. Then, with a wad of cotton dipped in the phenic and glycerin solution, rub hard all the diseased points, avoiding as much as possible contact with the cornea. This should be done twice a day. In the interval he applies every two hours a salve of methyl-blue (1 to 1000), basing his preference for this drug on Stilling's original investigations and those recently performed by Janicke, who has demonstrated that Loeffler's bacillus does not grow in bouillon containing methyl-blue in the proportion of 1 to 5,000,000, nor in serum added to 1 to 150,000 of methyl-blue. He has likewise proved that the aqueous solution of methyl-blue (1 to 2000) kills the bacillus in ten minutes and a solution of 1 to 1000 in one minute. In case of corneal complications he treats the ulcer as an ordinary infectious ulcer, cleaning its base with a jet of the antiseptic solution, touching it with the phenated glycerin, followed by an application of pilocarpine and of methyl-blue, and finally dusting in iodoform. He reports six cases thus treated in which he had a good result. Although leucoma of the cornea followed, there were no perforations. He considers his treatment superior to any that has been previously recommended.

#### *PSEUDO-MEMBRANOUS CONJUNCTIVITIS.*

CHEVALLEREAU (abstract in the *Revue Internationale de Bibliographie*, No. 1, January, 1894) reports the following interesting case: Four persons in the same family, living in a narrow street opposite to a house in which three children had diphtheria, developed almost at the same time symptoms of simple croupous conjunctivitis,—namely, a conjunctivitis characterized by slight catarrh, supple eyelids, on the under surface of which there was a false yellowish-gray membrane, easily removable in one piece, the subjacent mucous tissue being uninfiltated. In one case the cornea was ulcerated, but healed rapidly. The treatment consisted in irrigation of the eyelids with a solution of cyanuret of mercury (1 to 1500), compresses soaked in the same solution, and the application of a salve of the yellow oxide of mercury (1 to 50). No sign of diphtheritic poisoning appeared, although there appeared to be a connection between the two slight epidemics,—diphtheria in the one house and croupous conjunctivitis in the other. Only one eye was affected.

### THE DANGERS OF SUBLIMATE SOLUTION IN CATARACT EXTRACTION.

DR. T. E. MURRELL (*Medical Mirror*, February, 1894), although satisfied that bichloride of mercury possesses distinct germicidal value, deprecates its use in cataract extraction after the corneal section has been completed, because, in his experience, it induces striped keratitis and prevents closure of the wound. He believes that if the conjunctiva and lachrymal apparatus are healthy, thorough irrigation of the region with boric acid or sterilized physiological salt solution accomplishes satisfactory results, and quotes interesting experiences of his own in which the use of a 1-to-5000 solution of sublimate resulted in striped keratitis and non-closure of the wound for five weeks. Since this experience he has abandoned bichloride solutions after the corneal section has been made.

He doubts the value of bandaging both eyes after cataract extraction and confining the patient to bed in a dark room. As is well known, Dr. Murrell allows his patients very considerable latitude, not confining them to bed for a single day, unless they prefer it. The unoperated eye is not closed longer than one or two days, and sometimes not at all. He thinks the old method of long bandaging and rest in bed induces delirium, hypostatic pneumonia, and general adynamia.

### ADVANCEMENT OF THE RECTI MUSCLES BY THE FOLDING METHOD.

DR. JAMES M. BALL (*Tri-State Medical Journal*, February and March, 1894) recommends a method of advancement which is done as follows: The antagonistic muscle is first tenotomized; an incision is then made through the conjunctiva and subconjunctival tissues over the insertion of the muscle to be advanced. A strabismus-hook is passed under the muscle and held at right angles to it. The muscle is separated posteriorly from the subjacent tissues, thus permitting it to be lifted up by the hook, so as to form a loop. The size of the loop will depend upon the amount of advancement desired. Two needles, each armed with a strong silk thread, are made to pierce the muscle, which is folded upon itself behind the hook. The needles are then passed beneath the conjunctiva and brought out, one above the other, below the cornea. The strabismus-hook is slipped out and the threads are tied. A superficial suture is used to close the conjunctival wound. If there is considerable over-correction the sutures are removed early; if not,

they are allowed to remain from ten to thirty days. He compares this operation with the capsular advancement of De Wecker, from which it differs in that the sutures are passed through the muscle.

### THE TREATMENT OF TRACHOMA.

DR. FLAVEL B. TIFFANY (*Journal of the American Medical Association*, February, 1894) believes that of the ordinary remedies used in this disease, nitrate of silver and sulphate of copper fulfil useful indications, but that the latter remedy should not be used when there is pannus or ulceration. He then prefers the nitrate of silver. In such cases as require the yellow oxide of mercury, he believes that as ordinarily used it is irritating, and hence employs ten grains each of cocaine and the yellow oxide of mercury to the ounce of albolene.

The radical treatment of chronic trachoma consists of expression of the granulations, especially with Knapp's trachoma forceps or by means of a modified brossage. He believes that in obstinate cases of opacity, other treatments having been ineffectual, jequirity infusion may accomplish some good. To make this infusion he takes eight beans, which are ground and then macerated in an ounce of warm water for twenty-four hours. The fluid is drained, put in blue bottles, and kept in a cool place. Of this solution 1 or 2 drops are instilled into the conjunctival cul-de-sac, or, if a more active application is desired, the lids are everted and the solution applied by means of absorbent cotton. In about eight hours the symptoms of at first a catarrhal and afterwards a purulent conjunctivitis appear and a false membrane is developed, which is then treated on the principles suited to such cases, especially by hot water if the reaction is too great. Dr. Tiffany recommends as trustworthy the solution prepared by Parke, Davis & Co. As this is a strong solution, he advises that it be reduced by adding a few drops of it to as many more drops of water before applying.

### PRACTICAL THERAPEUTICS OF PHLYCTENULAR KERATO-CONJUNCTIVITIS.

SCHWEINITZ (*Philadelphia Polyclinic*, March 10, 1894) divides the treatment of phlyctenular kerato-conjunctivitis into,—

1. The local applications, which consist, during the stage of irritation, of warmed mild antiseptic lotions, atropine drops to maintain mydriasis, occasionally eserine, when there is a tendency to pustular formation on the corneal

margin, and frequent bathing with very hot water. Where there is intense photophobia, incision of the ulcerated fissure usually found at the commissural angle is recommended. In the later stages the yellow oxide of mercury or calomel, provided the patient is not taking iodide of potassium, is regarded as better than iodoform or dermatol, although both iodoform and aristol have given him good results.

2. The constitutional treatment, including proper climate, judicious diet, Lugol's solution, syrup of the iodide of iron, occasionally cod-liver oil, and small doses of the bichloride or biniodide of mercury.

3. The treatment of the naso-pharynx, which is considered of the utmost importance, especially if there is subacute or acute catarrhal inflammation and adenoid vegetations. These are regarded not merely as associated conditions, but as bearing a distinct causative relation to the disease, and often determining the relapses which are so characteristic of the affection.

#### THE ACTION OF ELECTRIC CURRENTS ON THE DISEASED EYE.

VELHAGEN (abstract in the *Revue Internationale de Bibliographie*, No. 1, January, 1894) operated first on the healthy eye by applying one pole to the closed eye and the other to the nape of the neck, and determined exactly the intensity of current necessary to excite a luminous sensation. Children from ten to fifteen years old saw the first flash with a current of from one-twentieth to one-thirteenth milliampère, while for adults a current of one-thirteenth to one-eighth milliampère is required. The arrangement of the electrodes has no effect. Eyes affected by recent or healed lesions of the cornea, or by troubles with the crystalline lens, without complication, behave like normal eyes. In ten cases of serious affection of the retina, no modification, either quantitative or qualitative, of the luminous sensation was observable, which proves, at least, that the retina plays only a very slight part in its production. On the contrary, the electric reaction was changed in six cases of atrophy of the optic nerve. The flash appeared later in relatively slighter forms, but the decrease of the reaction did not proceed parallel with the progress of the atrophy. As soon as the eye perceives the light, the current ought not to exceed three-fourths of a milliampère to produce the reaction. Other cases treated were simple glaucoma, chronic choroidoretinitis, disseminated choroiditis, and pigmentary retinitis. The author concludes that diminution of the electric sensibility of the eye

indicates a change in the optic nerve, and this may be used as a test to determine such changes in cases not settled by ophthalmoscopic examination, or in which this cannot be made.

#### CLEANSING THE HANDS FOR SURGICAL OPERATIONS.

BLAGOWESCHTSCHENSKI (*St. Petersburger Med. Woch.*, No. 4, 1894) thus describes his method of cleansing the hands for surgical operations. They are scrubbed for six or eight minutes in a mixture of 2 parts carbolic acid, 5 parts green soap, and 93 parts boiled water; then for three minutes are thoroughly rinsed in boiled water.

#### BLISTERS OF THE FEET.

In the German army the following application is employed for the rapid cure of blisters of the feet incident to long marches:

R Black soap, 52 parts;  
Water, 27 parts;  
Vaseline, 15 parts;  
Oxide of zinc, 6 parts;  
Essence of lavender, enough to perfume.

—*Bull. Génér. de Thérapeutique*, 2 livre, 1894.

#### ANTIPYRIN AS A LOCAL ANÆSTHETIC IN URETHRAL INJECTIONS.

WALTHIER (*Bull. Génér. de Thér.*, 2 liv., 1894) holds that by means of antipyrin injections of the ordinary antiseptics may be rendered quite painless. His formula is as follows:

R Bichloride of mercury, .02 parts;  
Antipyrin, 2 parts; •  
Distilled water, 200 parts.

Antipyrin is also commended in conjunction with bromide of potassium as being extremely valuable in subduing painful erections. It is given in doses of 15 grains combined with three times this quantity of bromide.

#### TREATMENT OF GONORRHOEAL ORCHITIS.

BETANCES (*La Tribune Médicale*, No. 7, 1894) thus summarizes the ordinary hospital treatment of gonorrhoeal orchitis. In accordance with Fournier's directions, rest in bed, immobilization of the inflamed part, local emollient applications, general baths repeated every day for three or four days and then every second day. Internally, the administration of diuretics,

laxatives, and light nourishment. The patient is kept in the recumbent posture until the entire disappearance of inflammatory phenomena.

HUMBERT orders absolute rest in bed, elevation of the scrotum, general bath once a week, oatmeal poultices, and counter-irritant ointment.

MAURIAC orders a bath three times a week, absolute repose, and purgation every second day, procured by means of Seidlitz water.

DU CASTEL orders rest in bed, application of twelve leeches to the cord, oatmeal poultices, general bath every second day, and on the days when the bath is not taken administration of Seidlitz water.

BALZER orders absolute rest and the application of compresses soaked in lead-water.

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*THE TREATMENT OF INNOMINATE  
ANEURISM BY SIMULTANEOUS  
LIGATURE OF THE CAROTID  
AND SUBCLAVIAN  
ARTERIES.*

GUINARD (*Bull. Génér. de Thér.*, 6 livre, 1894) states that distal ligature of branches beyond the sac gives the best result in treatment of innominate aneurism. This method is the only one which has given real success, not only for innominate aneurism, but also for aneurism of the arch of the aorta. The exact seat of the dilatation is of no particular importance in deciding for operation, since, whether this be in the aorta, the innominate, or at the origin of the carotid and subclavian, the treatment is the same.

POIVET, of fifty-five cases in which this operation was performed, noted six cures and twenty-two improvements.

WALTHIER tabulated only the cases performed since 1882 under antiseptic precautions. Out of twelve there were ten cures. Even the two unsuccessful cases were relatively satisfactory, since in one the tumor continued to develop slowly and in the other death did not follow until a year after operation, from left hemiplegia consecutive to ligation.

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*TREATMENT OF FRACTURES.*

SEREIN (*Centralblatt f. Chir.*, No. 8, 1894) described twenty-four cases of fracture treated by massage, and claims for this method cure in an extraordinarily short time. In addition to rubbing, he administered three times daily a powder made up of 2 grains of pyrophosphate of iron, and  $\frac{1}{2}$  grain of phosphate of calcium,

and illustrates by reports of cases the fact that crepitus disappears in eight to ten days and fixation results in less than three weeks.

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*TREATMENT OF SYPHILITIC NEURALGIA.*

OBELINSKY (*Berlin. Klin. Woch.*, February, 1894) reports the case of a man who had primary and secondary syphilis twenty years before coming under treatment, and for several years had suffered from violent neuralgia, which disturbed his sleep and entirely undermined his health. This pain took the form of intercostal neuralgia, was constant, but only reached an agonizing intensity during the night. He was subjected to the most careful treatment for several years, and travelled from place to place trying baths, electricity, and all the known methods of relief without avail. Even the actual cautery was applied and was as unsuccessful as the other means of treatment. Basing his opinion upon the nocturnal exacerbations and upon the futility of ordinary treatment, Obelinsky instituted a course of hypodermic injections of calomel. After the second the pain grew less in intensity and after the eleventh ceased entirely.

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*THE PRACTICAL VALUE OF BACTERIOLOGICAL EXAMINATION OF THE  
BLOOD IN CASES OF SEPTIC  
INFECTION.*

CANON (*Berlin. Klin. Woch.*, No. 9, 1894) has made a bacteriological examination of the blood in about seventy cases of septic infection. The blood was usually taken from a vein in the arm. It was inoculated upon agar and control experiments were performed with the pus of the wound. He groups the cases as follows:

1. Pure sepsis,—i.e., bacteria in the blood, but no metastases.
2. Bacteria in the blood, plus metastases.
3. No bacteria in the blood, but metastases,—i.e., pure pyæmia.

The bacteria found were mostly streptococci. In some cases the bacterium coli commune and the pneumococcus were found. Of seven cases of pure pyæmia, four died and three recovered. Search of the blood of the dead body was as unsuccessful as was that of the living in demonstrating the presence of germs. Metastatic abscesses were all due to streptococci. The cases run a somewhat prolonged course. As to the practical bearing of this research, the author holds that these examinations are of little therapeutic value, excepting that sometimes they are of service in determining whether or not

amputation should be undertaken with the idea of cutting off the source of septic poisoning. If living micro-organisms are found in the blood, it is safe to conclude that the time for amputation is past, since only as a rare exception does such a patient recover; yet two such recoveries are reported.

#### ALUMNOL.

SANDER (*Berlin. Klin. Woch.*, No. 12, 1894), after a somewhat extended experience of alumnol in the treatment of gonorrhœa, announces that this agent can in no manner be regarded as a specific. In acute cases it acted no better than other agents commonly employed. In chronic cases its action was very like that of nitrate of silver. This result is interesting in view of the glowing reports presented by Heinze and Liebrecht, who hold that alumnol exerts its astringent action not only on the surface, but in the deeper cellular tissues. These authors report that its action is almost specific in gonorrhœal endometritis, and use it in one-and-a-half-per-cent. watery solution twice daily.

#### TREATMENT OF ULCERS OF THE FOOT.

WITTHAUER (*Archiv f. Dermatologie u. Syphilis*, Bd. xxvi., Heft 3) enthusiastically commends the soziodolate of mercury in the treatment of ulcers of the foot or leg. The application is as follows: After thorough cleansing with soap and water, a plaster is applied made up as follows:

R Soziodolate of mercury, 1 part;  
Lanolin, 90 parts;  
Olive oil, 10 parts.

This is spread on lint and the foot and leg enveloped in it, a pressure bandage being applied. At first this dressing is changed every day, later every fourth or fifth day. Chronic granulations promptly become normal in appearance and cicatrization progresses rapidly. When there is a tendency for certain raw areas to remain sluggish, these are scraped and the fresh wound is sprinkled with a powder made up of,—

R Soziodolate of mercury, 1 part;  
Talc, 9 parts.

Beneath the scab thus formed cicatrization rapidly takes place. The same proportion of the mercuric salt is also commended in the treatment of eczema, the powder made up as just described, or the soziodolate of zinc, 1 part, talc, 9 parts, being used. Both subjective

and inflammatory symptoms are said to disappear rapidly. Sometimes the applications cause burning pain; this is slight and transitory.

#### GALLINOL.

Gallinol (*Journal of Cutaneous and Genito-Urinary Diseases*, vol. xii., No. 138) has, according to CAZENEUVE and ROLLER, an active reducing action on the skin, antiseptic and microbicidal, but not toxic, like pyrogallol acid. In eczema it quiets itching, stops exudation, and causes rapid drying of the surface. It is useful in psoriasis of moderate intensity, especially of the scalp and exposed portions, but not in the old and rebellious cases; in these chrysophanic acid acts better. Administered by the stomach or injected it has little toxic quality, though when introduced into the blood-current it kills by its reducing action. It is an excellent microbicide, especially serviceable in favus, trichophytosis, and other maladies produced by vegetable parasites.

#### TREATMENT OF THROMBOTIC PILES.

BOLTON STERNS (*Therapeutische Monatshefte*, February, 1894) holds that Fowler's solution causes rapid diminution in the size of thrombotic piles, and finally produces a cure. Sulphur is a still more powerful medicament, not only because of its laxative effect, but from its constitutional influence. The preparation administered was made up of a 1 to 3000 solution of sulphide of potassium. Of this, a teaspoonful was placed in a glass of water, and the latter was taken during the course of the day.

#### THE METHOD OF TREATING STRUMOUS DISEASES OF THE EXTREMITIES BY PASSIVE CONGESTION.

At the meeting of the Medico-Chirurgical Society of Edinburgh, December 6, 1893 (*Edinburgh Medical Journal*, No. 464, 1894), MILLER presented some interesting observations in regard to Bier's congestion treatment of tubercular affections of the extremities. This treatment is very simple. It consists in placing a broad elastic band around the affected limb, a few inches above the diseased part, firm enough to produce venous congestion. This congestion Bier believes should be kept up continuously, and the patients should be encouraged to use the limb. The elastic band should be broad, and a layer of lint or wool should be placed under it to protect the

skin. The point of application should also be changed every day or two to prevent abrasion. The distal portion of the limb is supported by a common roller-bandage carried up to the affected part, so that the congested area is limited to the immediate neighborhood of the disease.

Miller gives as an example of this treatment a case of disease of the elbow-joint. The hand and forearm were bandaged; then the elastic was applied to the middle or lower third of the upper arm, firm enough to produce congestive discoloration in the neighborhood of the elbow. Congestion is what is wanted, not œdema, still less anæmia. Pain is always absent, and the patient soon becomes accustomed to any slight discomfort produced.

Bier states that in upward of twenty cases treated at Kiel by this method, the improvement obtained in the majority of cases was very rapid and striking, and in no case did a change for the worse occur. The principle of this treatment was suggested to the author by the old belief that "a congested lung possesses an immunity against tuberculosis."

Miller advises the employment of this measure in strumous joint-disease and skin-affections of the extremities as the result of personal experience. It certainly does no harm; it can be combined with immobilization, and aids its action. It is very inexpensive and easily applied. He does not think that this new method can take the place of amputation, excision, incision with scraping, or of immobilization; nor is it appropriate for hospital cases, because so much time is required in order to carry it out properly. He believes the method warranted in tubercular skin-affections of the extremities; early tubercular disease of joints (combined with immobilization or blisters), especially those in which time is of no great importance; instances of multiple tubercular disease in which more radical treatment is inappropriate.

As an illustration of the last class the following case is reported: B. C., aged twenty-five, admitted December 12, 1892, suffering from tubercular disease of the left ankle, right elbow, little finger of right hand, and right patella. The left foot and the little finger were amputated, while the elbow and patellar disease were treated by Bier's method, with the addition of a splint in each case. After three months the patient left the hospital with the elbow much the same, while the disease of the patella had quite disappeared. At the date of this report the elbow is still much the same, the knee well.

#### *SOME RESULTS FROM THE ADMINISTRATION OF ORGANIC EXTRACTS.*

Some interesting facts are presented by FELKIN (*Edinburgh Medical Journal*, No. 464, 1894) in relation to organic extracts, which, though not affording definite information as to the permanent utility of these remedies, certainly warrant further experiment.

The author employed internal medication. Commencing with 10 minims of the fluid extract, he rapidly increased the dose to a drachm two or three times a day. Occasionally sharp diarrhoea followed the larger doses, and the patients varied in respect to the time when it was advisable to use the extract. Some took it well on an empty stomach, but in others it induced slight nausea, and had to be administered during a meal. This objection was not present in administering tabloids. In a few a rectal injection of the extract at bedtime, after the bowel had been cleansed by a simple enema, was most useful. In others the extract was employed in the form of suppositories or capsules; the latter can be easily introduced, and have the advantage of being readily filled by the patient with the necessary dose. The orchitic extract was invariably administered in this way. Felkin believes that organs such as the ovaries and the testicles possess the power of elaborating an internal secretion, which is perhaps not absolutely necessary, but is of importance to the organism.

The first case in which he administered cerebral extract was that of a boy, aged eight, suffering from pseudo-hypertrophic paralysis. Treatment began February 21. At that time he could hardly crawl up-stairs. The extract was administered regularly until July 24, when he was much brighter, could walk up- and down-stairs easily, took food better, could walk a mile and a half with comparative ease, his muscles were far firmer than at the commencement of treatment, and there was marked diminution in the size of his calves and buttocks. It was very noticeable with how much greater ease he managed to rise from the floor. At this time he passed from the writer's observation until October 2, during which time medicine was intermitted. He had distinctly fallen back.

The next case was one of nervous exhaustion and irritability of temper. Mrs. W., aged forty-five, married; suffered for two or three years from loss of memory, pain in her legs, and inability to walk far without extreme fatigue; nervous and hypersensitive, pale, decidedly anæmic. She commenced brain extract on April 5, half a drachm daily, and continued

this until July 25. At this time she was better in every way. Could walk five or six miles with ease, looked brighter, took three good meals a day, and said she felt a different creature. Since this time she has taken only two doses of brain extract a week, and is going on satisfactorily.

Mr. D. began taking drachm doses of cerebral extract on September 20, after a long bout of drinking. The good effect has been very marked. His abstention from alcohol aided in his improvement, but yet his appetite improved almost at once; he sleeps eight hours at night, gains strength rapidly, and the change in appearance is most satisfactory. Although he previously suffered for months from attacks of diarrhoea, his bowels are now quite regular. Even when on the verge of an attack of delirium tremens he took a complete turn for the better after a week's treatment.

The writer has used the brain extract in three cases of epilepsy with marked success.

In addition he has employed brain extract and tabloids with success in three cases of inveterate insomnia, in two of severe debility and general want of nerve-power, and in four cases of general neurasthenia.

The employment of orchitic extract is strongly urged in cases in which the ovaries have been removed in the hope of quieting hysteria or other nervous conditions. He employed this extract successfully in a case of grave hysteria, and in another of mental instability and nymphomania. In both cases orchitic suppositories were employed. In the case of a delicate, anæmic, highly excitable girl, aged seventeen, commencing puberty, in whom the onset of the menstrual function was accompanied by intense excitability and loss of self-control, cerebral extract acted very beneficially. Two other cases are reported in whom, after removal of the ovaries, severe melancholia, change of voice, and other unfortunate results followed, and on whom the cerebral extract had a markedly beneficial effect.

#### GASTROSTOMY AFTER WITZEL'S METHOD.

CAIRD (*Edinburgh Medical Journal*, No. 464, 1894) summarizes Witzel's method of gastrostomy as follows: The patient is anæsthetized and the customary antiseptic precautions are observed. The usual incision is made, the rectus split along the course of the fibres, and its sheath and the peritoneum are opened. The stomach is then sought for, seized by the fingers, and a portion of the anterior wall as

large as the palm of the hand is pulled out through the wound and packed around with sterilized gauze, moist and warm. The surgeon next opens the stomach. He selects a spot near the lesser curvature, free from vessels, and makes a small incision about a quarter of an inch in length. He has in readiness about two feet of red rubber tubing, in diameter equal to that of a drawing-pencil, and slips about one inch of this into the stomach through the incision, which it accurately plugs. Should there be any excessive bleeding, it may be arrested by a catgut suture, which serves to fix the tube provisionally. Care must be taken to wipe up any escaped fluid from the stomach. The tube, which hangs across towards the greater curvature, has now to be secured in position and a species of artificial œsophagus formed. This is managed by the surgeon raising a fold of stomach on each side of the rubber tube with a series of interrupted silk Lembert sutures, on tightening which the tube is buried for about two inches of its length in the folds. Two or three similar sutures beyond the sunken extremity of the tube effectually shut off the new œsophagus from the peritoneal cavity at the farther end. A little sterilized iodoform powder is rubbed over the stitches, and a second line of sutures are put in over the first to promote the efficient union of the serous surfaces enclosing the tube. Before returning the stomach, a few loose sutures may be passed through the folds and outer portion of its wall at the free extremity of the rubber tube, and on replacing the stomach these loose sutures are secured to the abdominal wall. A funnel is then attached to the rubber tube and as much food as necessary administered. The operation may be completed within thirty minutes.

The patient speedily learns to feed himself; regurgitation of food through the wound is not possible, since the tortuosity of the new channel and the valve-like action brought about by the contraction of the stomach entirely preclude this. The tube should be removed about once a month. The free surplus of the old tube should be cut and a long eyed-probe passed into the stomach through the portion that remains, which may now be removed. The new tube should be strung on a silken thread, the end of which is now to be attached to the probe, and so one readily slides the new tube over the probe onward into the stomach, and, pulling on the silk, thereafter withdraws the probe. Should the œsophagus again regain its function, as in cicatricial stricture, on withdrawal of the tube there is never

any outflow of fluid and the fistula rapidly heals. Autopsy in cases examined several months after operation showed that the new canal gradually shortens, straightens, and its walls become thicker. The inner extremity is found guarded by a funnel-shaped arrangement of concentric folds of mucous membrane, or it projects inward something like the ileo-cæcal valve or entrance of the ureters, thus presenting an efficient valvular defence against escape of stomach contents.

TREATMENT OF PERITONITIS IN WOMEN.

Aside from the etiology of the affection, it is held by LUTAUD (*Revue Obstetricale et Gynécologique*, February, 1894) that general rules regarding the early treatment of peritonitis are practically the same. Two indications are of paramount importance,—first, to control the pain and prevent extension of inflammation; second, to control vomiting, tympany, constipation, and the other secondary symptoms. As to the first indication in the early stages, and especially when the disease is still local, fifteen to twenty leeches should be applied over the painful area. This should be followed by an application over the entire abdomen of flexible collodion, which should be renewed every twenty-four hours. Every hour a pill is administered made up as follows:

- R Extract of opium, gr.  $\frac{1}{4}$ ;
- Sulphate of quinine, gr. i;
- Extract of cannabis indica, gr.  $\frac{1}{8}$ .

If the pain is intense, relief should be given by hypodermic injection containing  $\frac{1}{4}$  to  $\frac{1}{2}$  grain of hydrochlorate of morphine. Opiates, however, should be administered by the mouth, if possible. An ice-bag should be applied to the abdomen, or, if the weight of this cannot be supported, hot turpentine stupes. When vomiting prevents the exhibition of quieting remedies by the mouth, suppositories may be given containing opium and belladonna. Sleep is secured by the administration of an enema containing 30 grains of chloral and the yolk of an egg in 6 ounces of water. Vomiting is treated by effervescing waters, cracked ice, frozen champagne, or the following mixture:

- R Fresh lemon-juice, 1 tablespoonful;
- White or red wine, 2 tablespoonfuls.

Just before this mixture is administered there is added bicarbonate of potassium, 1 tablespoonful, the whole being taken during effervescence. Nourishment is given in the form

of cold beef-juice, milk, and Seltzer. Constipation is best combated by means of castor oil, aided by fractional doses of calomel, or, better still, calcined magnesia may be employed. For the subacute or chronic stages the purgative mineral waters are useful. When the stomach resists laxatives, or when the constipation persists, glycerin injections or suppositories may be used. In case these fail, injection of the more powerful enemata may be found serviceable. When the disease becomes subacute, the following ointment should be applied to the abdomen:

- R Mercury ointment, 20 parts;
- Extract of belladonna,
- Iodide of potassium, of each, 2 parts.

Of this, a portion the size of a hazel-nut should be applied to the hypogastric region three times daily and should be covered in by bandage. Lavage and antisepsis of the genital organs should receive careful attention, hot vaginal lavage being particularly useful.

TREATMENT OF SOFT CHANCER.

DUBREUILH (*Journal de Médecine de Bordeaux*, No. 8, 1894) holds that the most successful treatment of soft chancre is by means of iodoform powder, applied three times daily, and preceded by local washings with one-per-cent. carbolic solution as hot as can be borne.

LANELONGUE holds that for ten years he has been content with the application of iodoform powder.

MENEAU applies pyrogallic acid in the form of a twenty-five-per-cent. ointment.

VENOT advises deep cauterization, followed by application of iodoform.

THE TREATMENT OF SUPPURATIVE SYCOSIS.

Under this title, LEISTIKOW (*Monatshefte f. Praktische Dermatologie*, Bd. xiii., No. 5) classes those cases of suppurative inflammation of the hair-follicles from which project short thick hairs. These cases may present themselves in the form of impetigo-like pustules, follicular and perifollicular abscesses, or as deep funicular swellings in which the hair entirely disappears, and which are followed by scarring. The impetigo-like pustules in the cases of suppurative folliculitis and perifolliculitis are treated with a powder made up of 10 parts of carbonate of magnesium, 15 parts of oxide of zinc, and 1 to 2 parts of precipitated sulphur;



or a paste made up of 10 parts of oxide of zinc, 2 parts of talc, and 28 parts of benzoated lard; or, better:

- R Zinc oxide, 6 parts;  
Sulphur, 4 parts;  
Silicon, 2 parts;  
Benzoated lard, 28 parts.

To this last prescription may be added five per cent. carbolic acid or three to five per cent. salicylic acid. To the first prescription three per cent. resorcin may be added or a one per cent. sublimate; or obstinate lesions may be treated with twenty to fifty per cent. of resorcin in alcohol or with concentrated carbolic acid. In case these applications cause irritation, superfatted sulphur or bichloride soap should be employed, together with soothing plasters, preferably made up of zinc and sulphur. Deep syccosis with marked infiltration is treated with mercuric or carbolic plaster mull, or salicyl-creosote plaster mull. In especially obstinate cases, local applications are made of a five-per-cent. ointment of either pyrogallallic acid or chrysarobin.

#### TREATMENT OF BURNS IN CHILDREN.

WERTHEIMER treats burns in children by first thoroughly washing the injured part with lukewarm boric-acid solution. Over this is placed absorbent gauze which has been soaked in lime-water and linseed oil, each 50 parts; thymol, .05 to .10 part. This is placed over the raw surface in the form of broad strips, is covered in with absorbent cotton, and is held in place by a moderately firm gauze bandage. The dressing should be renewed every day. By the end of the second week the following ointment is employed:

- R Bismuth subnitrate, 9 parts;  
Boric acid, 4.5 parts;  
Lanolin, 70 parts;  
Olive oil, 20 parts.

This is applied on absorbent gauze strips as was the first mixture. Internally, stimulants are administered.—*Archiv f. Dermatologie u. Syphilis*, Bd. xxvi. Heft 3.

#### TREATMENT OF ECZEMA.

KLOTZ, in the course of a paper upon the principles of antiseptics in the treatment of eczema, holds that it is well to begin by producing thorough disinfection of the affected surfaces. Thus, after removal of crusts with

water and soap, the part should be washed with corrosive sublimate not stronger than 1 to 3000 or 1 to 5000. This solution is used hereafter morning and night by means of a pad of absorbent cotton, and, if possible, this pad, well soaked in the solution, is to be kept applied to the diseased surfaces from half to one hour during each washing. The parts are then dried, and a ten-per-cent. boric-acid vaseline ointment is rubbed into the skin and covered with a cotton bandage. In a few days all suppuration ceases. In milder cases two- or three-per-cent. boric-acid lotion takes the place of the corrosive sublimate. In acute inflammatory cases, especially when the legs are involved, with or without ulcers, 2 to 4 parts of acetate of lead are added to each 4000 parts of boric-acid solution, and compresses soaked with this mixture are constantly applied for several days. Even in the dry forms of eczema these wet applications are of service.

PETRILLI warmly recommends zinc sulphate as an external application in the treatment of eczema, basing his favorable opinion upon a number of reported cases in the *Archiv für Dermatologie und Syphilis*, Bd. xxvi. Heft 3.

#### TREATMENT OF DEPRESSION OF THE SKULL OF THE NEW-BORN.

JENNINGS (*New York Medical Journal*, vol. xix., No. 10) holds that depressions in the skull of the new-born should not be left to nature, since many cases of hemiplegic epilepsy and impaired intellect result, and the deformity incident to the indentations often persists. He offers the following conclusions to his paper:

Use pneumatic traction. If this fails, trephining is the best operative procedure.

Trephining, *per se*, is not a dangerous operation.

The removed button of bone can be replaced with good prospect of its union, on account of the vascularity of the bones at this age.

Frontal depressions rarely correct themselves.

Immediate action is desirable, if there are symptoms which indicate operation.

If the depression is still exaggerated at the end of two weeks, an operation should be performed to prevent subsequent brain-trouble and overcome the deformity.

#### TREATMENT OF ACUTE PSORIASIS.

In the treatment of acute psoriasis arsenic is to be avoided, but iodides are to be given in large doses, the beneficial effect being due in part to their diuretic influence. Wine of anti-

mony is to be used with great caution. Turpentine, when the kidneys are healthy, is sometimes of service, apparently because of its well-known effect in producing contraction of blood-vessels and thus lessening hyperæmia. In the local treatment a point of cardinal importance is the careful removal of the scabs and the application to all portions of the lesion of an antiparasitic medication. This represents the views of Crocker, as quoted from the *British Medical Journal* by the *Therapeutische Monatshefte* for February, 1894.

#### THE EMERGENCY TREATMENT OF URINARY RETENTION FROM ENLARGED PROSTATE.

REMY (*Bulletin Générale de Thérapeutique*, 65 année, tome cxxvi) holds that when there occurs complete retention with impossibility of passing instruments by the urethra, the suprapubic puncture should be made and a soft catheter introduced through the canula of the instrument employed for tapping. The canula should be taken out and the catheter left in place until the bladder can again be drained through the urethra.

#### A NEW TREATMENT OF ERYSIPELAS.

ARNOZAN (*Archives de Médecine et de Pharmacie Militaires*, No. 2, 1894) strongly recommends the following treatment: Quinine is administered in doses of 8 to 16 grains, in accordance with the temperature, 4-grain pills being given three or four times daily, so that the patient is kept constantly under the influence of the drug. Over the affected surface is applied an ointment made up of,—

R. Bichloride of mercury, gr. i;  
Lanolin,  
Vaseline, of each, ʒss.

Of twenty-five cases thus treated there was frequently noted a prompt arrest of the eruption or, in case this failed, marked alleviation of the symptoms. The temperature fell in three or four days, and the average duration of the attack was five to seven days.

#### EXTERNAL ŒSOPHAGOTOMY FOR THE REMOVAL OF FOREIGN BODIES.

CAHIER (*Archives de Médecine et de Pharmacie Militaires*, No. 2, 1894) reports the case of a sergeant whose false teeth were lodged in the œsophagus in the region of the cricoid cartilage. Measurement showed that the foreign body was eight inches from the incisor teeth.

Attempts at extraction by forceps were futile; therefore external œsophagotomy was performed, the incision passing from the sternal notch to the upper border of the thyroid cartilage to the left of the middle line. The omohyoid was divided and a portion of the sternothyroid. A longitudinal incision was made in the œsophagus, an œsophageal sound was introduced through the wound, and the whole incision was packed with iodoform gauze with the exception of the upper portion, which was sewed. The patient died three days later. Autopsy showed that the œsophagus had been ulcerated through by the foreign body and that the mediastinum had been thus infected. This case shows that immediate operation should be performed for such accidents, especially when the foreign body is irregular. Indeed, Terrier states that a physician should never leave a patient who has a foreign body lodged in the œsophagus without having in one way or another removed the obstacle. Immediate suture of the œsophagus may be practised when the foreign body has been lodged such a short time that ulcerative inflammation has not occurred. Under other circumstances the wound should be packed.

#### TREATMENT OF DYSMENORRŒA.

DR. WHIPPLE (*Buffalo Medical and Surgical Journal*, vol. xxxiii., No. 8), after an interesting and profitable discussion of the subject of dysmenorrhœa, reaches the following conclusions:

The suggestion of a vaginal examination is a great shock to the sensitive, shrinking nature of the young girl, worn out with suffering at each menstrual period, and terrified at the expectancy of a recurring one. Nor will the considerate physician exact this until all probable and improbable remedies have been exhausted, without success, in the endeavor to overcome the persistent dysmenorrhœa. If the sufferer is then unrelieved, more radical measures must be employed.

The first step in the treatment of the married woman should be a thorough examination, for the purpose of detecting any existing displacements, stenosis of the cervical canal, or congestion of the generative organs.

If displacements, flexions, stenoses, occlusions, or polypi be present, and in some diseased conditions of the ovaries, only operative measures will give relief.

In many cases due to inflammation of uterus and ovaries the use of galvanism has given great satisfaction in completely overcoming the existing dysmenorrhœa.

If the patient be anæmic or chlorotic, a tonic course of treatment, with enforcement of strict hygiene, is indicated.

The habit which some young women and girls have formed of using alcohol and morphine, at first for relief from dysmenorrhœa, and finally for every ache and pain, until they find the habit too firmly fixed to be discontinued, should be denounced in no uncertain terms by the family physician.

In those cases characterized by a scanty menstruation, in which no well-defined local or organic lesion can be found, but where a neurotic or hysterical tendency prevails, the employment of drugs generally proves successful; but a proper selection of remedies can be made only after a careful study of each individual case, since that agent which brings relief to one from distressing dysmenorrhœa may be utterly worthless for another, and what proves a success at one time may be a failure at the next.

#### *FISSURE OF THE ANUS AND PAINFUL EROSION OF THE RECTUM IN INFANTS AND CHILDREN.*

KOPLIK (*Mathews's Medical Quarterly*, vol. i., No. 1) recommends the following treatment: Chloroform is administered, and when anæsthesia is complete the Sims speculum is passed into the rectum. The parts first having been cleansed with soap and brush, a full-sized speculum is used, an exploratory view of the lower bowel being thus obtained. If no growth, such as a polypus, be present, the speculum is withdrawn and the anal ring (sphincter) is thoroughly stretched with both thumbs, both in an antero-posterior and transverse direction. The fissure is burnt with a Paquelin cautery in its longitudinal diameter; a tampon of cotton may now be inserted high up, so as to support the bowel. The operation lasts but a few minutes, and there is no after-treatment with opium.

The patient during the operation is placed on the back on a hard table, with a pillow beneath the buttocks; the thighs are held by the assistant up against the abdomen. The tampon is removed after twenty-four hours. The parts are sometimes excoriated from the effects of the above manipulations. In these cases a ten-per-cent. ointment of resorcin is of value, applied twice daily, both for its antiseptic and apparently local anæsthetic effects. In no case of the writer's did the bowel descend through the anal ring after operation. No dosing with opium to restrain the intestinal movements is necessary. The recovery in all cases was complete and lasting. The constipation disap-

peared also with the return of the sphincters to their normal condition.

In relation to the prophylactic treatment, Henoeh advises in cases of constipation in infancy a change of diet from a milk to a mixed diet. This is applicable to older children and infants whose dentition is well under way. In children under a year old other things must be thought of. A mixed diet is only applicable in milder forms of constipation. In these forms we exclude the farinacea and starches and curtail the milk, which in cold weather may be administered in the form of unsterilized cream or cream and milk equal parts. In young children we sterilize the milk in warm weather, according to the author's method of 87° to 90° Celsius.

The writer has found that by far the most useful drug in the treatment of constipation of the ordinary type has been the fluid extract of cascara sagrada. The dose for an infant under six months of age is 10 minims, taken at night in some agreeable elixir or syrup. Older infants may take even as much as 30 minims without ill effects, such as vomiting.

The introduction into the rectum of suppositories of soap, coca-butter, or glycerin as an habitual practice is to be strongly deprecated for the same reason as are habitual injections. The use of suppositories or injections cause excoriation and also eventually fissures. In saying this, the writer is conscious of the fact that the use of the above remedies is sanctioned by some experienced men, but he has only seen harm in allowing the average nurse or mother to thus habitually treat the infant. In one case the author is certain that the hard nozzle of the syringe only aggravated, if it did not cause, the fissure.

The administration of drugs to the nurse or mother in the case of breast-fed infants, in order that the milk may become the vehicle of the drug, has not met with success in the writer's hands. It has only upset the normal functions of both nurse and child.

Certain infants suffer from painful excoriations about the anus in the form of chronic or subacute eczema. In these cases there are any number of minute fissures in the anal folds. This condition, if neglected, may well give rise to serious fissure. In these cases the acidity of the movements seems to be at fault. The infant should have its diet corrected, and, if necessary, have some drug—such as bismuth, which is excellent—in sufficient quantity for a few days to correct the error of intestinal changes. The local eczema or intertrigo is best treated with resorcin ointment, ten per

cent. This is applied to the parts three times daily. As soon as it is applied it is wiped off, leaving the parts simply with a thin coating; they are then dusted with oxide of zinc which has been very finely ground in a mortar to eliminate the gritty particles. The excess of oxide of zinc must be blown off as soon as applied, else it will cake and become an irritant. In this way, carefully applied three times daily, these remedies will soon cause a troublesome anal eczema to disappear.

#### TREATMENT OF VOMITING OF PREGNANCY.

LUTAUD (*Revue Obstetricale et Gynécologique*, February, 1894) states that vomiting of pregnancy is best treated by cocaine. The action of this drug is often strengthened by combining it with antipyrin. Thus, the following prescription:

R Chlorhydrate of cocaine, gr. iss;  
Antipyrin, gr. xvi;  
Distilled water, ℥iv.

Sig.—1 teaspoonful every half-hour until vomiting ceases.

If the stomach will not tolerate this quantity of liquid, 10 drops of a one-and-a-half or two-per-cent. solution of cocaine are administered, repeated at one- or two-hour intervals.

At times the application of cocaine to the os is extremely valuable. The following prescription may be used:

R Hydrochlorate of cocaine, gr. xvi;  
Extract of belladonna, gr. iv;  
Vaseline, ℥ss.

Cotin's method of dilating the os with the finger sometimes causes immediate cessation of vomiting. Occasional success will follow Routh's procedure, which consists in exposing the uterine neck by means of a speculum and painting with tincture of iodine. In cases of moderate severity the following mixture will be found serviceable:

℞ Tincture of iodine, ℥ii;  
Chloroform, ℥ii.

Sig.—5 drops night and morning at meal-times, taken in Seltzer-water.

#### TREATMENT OF VAGINISMUS.

LUTAUD (*Revue Obstetricale et Gynécologique*, February, 1894) recommends copious injections with mild antiseptic, non-irritant lotions, such, for instance, as the following:

R Chlorate of potassium,  
Laudanum, of each, 200 parts;  
Tar-water, 200 parts.  
Tablespoonful to a quart of water.

These injections should be made thoroughly, being carried well into the vagina by means of a glass nozzle. Each evening a vaginal bougie should be introduced, made up as follows:

R Coca-butter, ℥ii;  
Hydrochlorate of cocaine, gr. iv;  
Extract of belladonna, gr. iiss;  
Bromide of strontium, gr. iv.

In case of leucorrhœa a cylindrical suppository is advised, made up of,—

R Coca-butter, ℥ii;  
Iodoform, gr. xv;  
Extract of belladonna, gr. viii.

The vulva and the vaginal introitus are frequently painted with a five-per-cent. solution of cocaine. This is especially to be used immediately before sexual approach. Moreover, the parts should be thoroughly lubricated at this time. Prolonged warm baths are useful combined with dilatation. In certain rebellious cases where surgical operation is not allowed, coitus may be accomplished after the hypodermic administration of a full dose of morphine. As a single approach may cause conception, the suffering may be thus permanently relieved.

#### FIBROID TUMORS OF THE UTERUS.

BURRAGE (*American Journal of Obstetrics*, March, 1894) closes a paper on the subject of fibroid tumors of the uterus with the following conclusions:

Hysterectomy is contraindicated in a majority of cases of fibroids, because of the high rate of mortality and because it unsexes the patient, the latter an important consideration in younger women.

Electricity is the best therapeutic means at our disposal to combat pain, hemorrhage, and impaired health and strength.

Intrauterine galvanism is most serviceable.

We must not look for a permanent reduction in the size of the tumor.

Galvanism—vaginal, intrauterine, or by puncture—does not cause abscesses or adhesions.

Galvanism is of no use as a means of diagnosing the presence of pus.

Treatment by electricity after the Apostoli method is absolutely safe.

Every case of fibroid tumor of the uterus should be under competent medical observation, because of the danger of malignant degeneration, kidney-disease from pressure on the ureters, complications during pregnancy, and the liability of the occurrence of pain and

hemorrhage and functional nervous disorders, especially during a delayed and protracted menopause.

#### TRIFACIAL NEURALGIA.

QUENU (*Universal Medical Journal*, vol. viii., 1894), after alluding to the frequency with which neuralgia recurs after resection of the inferior maxillary nerve, thus describes the operation which he has devised for sectioning this trunk before it passes through the oval foramen. This operation, he states, requires but five minutes in a living subject. The temporal fossa is denuded by a curved incision as far as the crest, separating it from the zygomatic fossa. The zygomatic arch is sawed or cut at its two extremities, and the temporal flap severed and thrown as low down as possible. The skull is opened with the trephine above the crest just mentioned. This opening is then increased towards the lower portions by means of chisel forceps. The dura mater is detached with the finger, while on the external side the vault of the zygomatic fossa is rapidly severed by a rasp. The wound need not be cleansed, since the finger is a sufficient guide. When the forceps is two-fifths of an inch from the crest, the foramen ovale is felt for by means of a small hook, practically a short aneurism needle. The left index finger, inserted transversely, enters a small depression, limited in front by the edge of the pterygoid process, in the back by the sharp spine of the sphenoid. The foramen ovale and the foramen spinosum lie in this region, and the hook introduced flat upon the finger and turned upward engages at once in the oval foramen, since the blunt point of the hook is too large to enter the foramen spinosum. The pterygoid and temporal muscles are pushed back by a large retractor and the nerve is resected as far as the Gasserian ganglion. This operation should be performed under the guidance of the eye. Where this is difficult or impossible, it is stated that if a small curette introduced into the foramen ovale grates upon the osseous substance of the latter, this is a proof that the nerve has been divided.

#### DRAINAGE IN COMBINATION WITH A PERMANENT DRESSING.

KRONACHER (*Wien. Med. Presse*, No. 2, 1894), on the basis of eight years' experience, warmly commends the method of drainage combined with permanent bandage suggested by Sée. This consists in placing an ordinary rubber tube so that the wound is thoroughly drained. Silk thread is attached to this tube and brought

out beneath the dressing. The ends of the thread are secured to the surface outside the wound, dressing with gauze and collodion, and over this is placed a small antiseptic dressing. On the second or fourth day this small dressing is removed, and by means of the threads lying beneath it the tube is drawn out from the wound and from beneath the main dressing; the latter is then re-enforced by some additional turns of a roller.

#### ANTISEPTIC TREATMENT OF BURNS.

NAGOTTE (*Centralblatt f. Chir.*, No. 7, 1894) shows that the most rapid healing and the least deforming scar after a severe burn is to be obtained by surgical antiseptics. To secure this it is necessary in cases of extensive burns to administer an anæsthetic and to subject the wound to thorough, even rough, applications of the methods and solutions ordinarily employed in cleansing infected wounds. Once thoroughly disinfected, an effort should be made to procure healing under dry dressing. As remedies to be employed for maintaining disinfection, iodoform, thyol, ichthyol, and especially subnitrate of bismuth are commended.

#### INTESTINAL ANASTOMOSIS (WITH SENN'S PLATES) FOR CANCEROUS OBSTRUCTIONS.

ELLIOT (*Boston Medical and Surgical Journal*, March 22, 1894) reports the following case treated by this method: The patient was a feeble man, sixty years old. In August he had an attack of vomiting and diarrhoea. In September he began to lose his strength and to have attacks of dizziness. He also had a serious stoppage of the bowels, with pain on the right side, which was relieved by castor oil. He soon found that solid food gave him colic; he therefore took only liquids. In October he had more pain on the right side of the abdomen and the movements became more difficult; then the abdomen began to swell.

In November all his troubles became worse; he ate less, and had more pain. He then entered the Massachusetts General Hospital. There he vomited for four days, ate nothing, and was kept alive by nutrient enemata. He improved somewhat in his general condition, but had absolutely no movements of the bowels. No tumor could be felt.

On December 15 the abdomen was opened, and the bowel was found to be completely obstructed by a cancerous mass in the cæcum. An anastomosis was then made, with Senn's

plates, between the colon and the ileum. The operation did not take more than fifteen or twenty minutes; the patient, feeble as he was, had little or no shock. He made a rapid recovery. His bowels moved in twenty-four hours, and he took solid food on the fourth day.

Three months after operation he has free and natural movements of the bowels and has gained twenty-two pounds. He has no pain and feels perfectly well. The growth has increased in size and can be plainly felt in the abdomen. If he were a stronger man removal would be advisable.

The author considers intestinal anastomosis one of the greatest advances in surgery. The operation is very quickly and easily done. The advantages to the patient of an intestinal anastomosis over an artificial anus are enormous.

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#### GALLOBROMOL IN THE TREATMENT OF CASES OF ACUTE AND CHRONIC GONORRHOEA.

CAZENEUVE and ROLLET (*Journal de Médecine de Paris*, February 18, 1894) have used gallobromol in the treatment of gonorrhœa. One case of early acute inflammation, the nature of which was determined by microscopic examination, was treated. This was aborted by a ten-per-cent. solution. Cases in which the discharge was well established or had become chronic were treated by copious irrigations—a pint at a time—of one- or two-per-cent. solutions. As a result of this treatment, the pain was gradually relieved, erections became less frequent, the discharge quickly disappeared or, at least, became reduced to a minimum. Chronic cases yield kindly to injections with the ordinary syringe and especially to instillation made in the posterior urethra. For the latter purpose a two-per-cent. solution was used.

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#### TREATMENT OF GONORRHOËAL ARTHRITIS.

This disease, according to GUPAN (*Gazette Médicale de Paris*, No. 9, 1894), if acute and with slight effusion, calls for the immobilization of the affected joint in the most favorable position for ankylosis. Compression should be made by means of a flannel bandage beneath which is placed cotton. If, after four or five days, there is no relief of symptoms, the syno-

vial cavity should be opened by puncture and should be washed out with a solution of bichloride (1 to 4000). If this gives no relief, arthrotomy should be performed. Where there is abundant articular effusion, puncture and compression is indicated. When the liquid presents a purulent appearance, arthrotomy is indicated. When the arthritis is suppurative, arthrotomy should be performed immediately. This operation is also indicated when the effusion has lasted for several weeks without yielding to gentler means. This operation implies the observance of every antiseptic precaution, and may be performed under the influence of cocaine. The incision into the synovial cavity should be free and should be washed out with mild antiseptic solution. If possible, the whole cavity of the joint should be explored with the finger, and adherent and fibrinous masses should be removed, the articulations drained, the opening sutured, and an antiseptic pressure bandage applied. As soon as the active symptoms have subsided, passive movement is instituted.

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#### GOOD RESULTS FOLLOWING MODERN ANTISEPTIC TREATMENT IN LITHOTRITIES.

POUSSIN (*Archives Clinique de Bordeaux*, No. 2, 1894) reports two cases of death out of thirty-five lithotrities, a mortality considerably above that of Guyon, who lost but one case out of one hundred and eighty operations. The author calls attention to the marked diminution in mortality which followed the application of modern antiseptics to the operation.

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#### CHLOROFORM VERSUS ETHER NARCOSIS.

KORTE (*Berlin. Klin. Woch.*, No. 10, 31 Jahr), after freely granting the much greater safety of ether as an anæsthetic from a statistical stand-point, shows, on the basis of several hundred cases he has observed, that chloroform is slightly quicker in producing full anæsthesia. Under ether the pulse was found fuller and stronger than under chloroform. Heart syncope almost never occurs under ether, but under chloroform is frequent, sometimes running to a fatal issue. Breathing under ether is more natural than under chloroform. Stoppage of the throat by dropping backward of the tongue occurs less frequently under ether than under chloroform. Vomiting follows ether less frequently; prolonged excitement lasting en-

tirely through the operation was in a series of contrasted cases more frequently observed under chloroform than under ether. Clonic contraction of the muscles with tetanic rigidity of the limbs was frequently observed in the beginning of etherization. In a few cases it persisted, and was only relieved by administering a few drops of chloroform. As to the kidneys, the author holds that *ether has no bad effect upon them*. Out of the six hundred cases anaesthetized, two hundred and three, either before or after etherization, showed albumin in the urine. In seven cases albumin was present on operation. Its quantity was not influenced by administration of ether. In six cases before operation patients exhibited no albumin, but after operation there was distinct albuminuria. In all of these the presence of albumin could be explained on grounds other than those connected with the administration of ether, although in four cases slight transitory albuminuria was apparently associated with the administration of this drug.

*Bruns has shown that the action of chloroform upon the kidney is far more severe than is that of ether.* The tracheal and bronchial mucous membranes are always somewhat irritated by ether. The author holds that the only contraindications to the use of ether are recent bronchitis, inflammatory diseases of the lungs, or acute obstruction of the larynx or trachea; finally, for operations on the face and mouth, for the completion of which a face-mask or etherizing apparatus must be removed for a long period. With these exceptions, ether is always to be preferred to chloroform.

#### THE PREVENTIVE TREATMENT OF SYPHILIS.

WICKHAM (*Gazette Médicale de Paris*, No. 9, 1894), under the above title, discusses what he considers the best method of preventing any of the manifestations of syphilis after the disease has once been diagnosed. He holds that the first year of treatment should be mercury, the second year mercury, the third mercury and iodide, the fourth iodide, and the fifth iodide.

#### AMPUTATIONS AT THE HIP-JOINT.

ESTES (*International Journal of Surgery*, vol. vii., No. 3) reports seven amputations at the hip-joint. He lays particular stress upon hemorrhage as the cause of fatal shock, and took

every precaution in his operations to avoid this. As a result six cases recovered. His method of procedure is first to force the blood out of the extremity, next to tie the femoral vessels at Poupart's ligaments between two ligatures and divide them; next an anterior flap is gradually made from without inward, great care being taken to secure all known vessels before they are cut by means of double ligatures or two hæmostatic forceps, and all muscular or small branches, when cut, must be immediately secured. After the capsule is reached anteriorly the posterior flap is dissected up with the same care as to securing the blood-vessels. Finally, the capsule is incised and disarticulation is accomplished in the usual way. By this operation, which the author calls the gradual dissection method, not more than an ounce of blood is lost. Estes compares his results with Wyeth's, who has recently tabulated forty cases performed by various operators. In this tabulation there is a general mortality of 22.5 per cent., although nearly all of the operations were done for pathological conditions. Of the eight cases done for injuries, all perished. Three of Estes's cases were railroad crushes, and all recovered. In case of crush, he advises waiting until reaction occurs, thoroughly cleansing the wound in the mean time and checking hemorrhage by pressure.

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### Reviews.

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THE UNITED STATES DISPENSATORY. By George B. Wood and Franklin Bache. Seventeenth edition, revised and illustrated. By H. C. Wood, M.D., LL.D., Joseph P. Remington, Phm., F.C.S., and Samuel P. Sadler, Ph.D., F.C.S.  
Philadelphia: J. B. Lippincott Company, 1894.

It is a credit to the professions of medicine and pharmacy, and the American profession in particular, and still more to Philadelphia as a medical and pharmaceutical centre, that so noble a work as the United States Dispensatory should have its birth in this city, and should continue to be so ably edited by the successors of the eminent men who originally compiled it.

For many years it was the only book which could be relied upon by the physician and druggist who desired general information for professional use, and until the advent of the National Dispensatory, the fifth edition of which was reviewed in the last number of the GAZETTE, it held undisputed sway. The names

of Stillé and Maisch, however, are such an earnest of ability as authors and compilers that any work issuing from their pens must be regarded as a powerful rival of similar compilations. The question which is of interest to the average physician and pharmacist is as to which of these two volumes he wishes to purchase, as few persons will desire to be possessed of both of them. As was pointed out in the review of the National Dispensatory, the work of Professor Maisch is unrivalled, while that of Professor Stillé, in considering the therapeutics of the various remedies, is, it goes without saying, equally good. To the physician who desires to obtain a large amount of therapeutic information from his Dispensatory we cannot recommend the United States, since the articles on the medicinal uses of drugs prepared by Dr. Stillé are much more exhaustive and are accompanied by copious references to recent medical literature. Thus, in the article upon "Chloroform," the most recent discussions concerning the action of this drug, at least up to July, 1893, are included, whereas in the United States Dispensatory the very important discussions which have gone on concerning the influence of this drug are almost totally ignored, except in a footnote of five lines on page 376, where reference to some statistics, under date of October 29, 1892, are given, otherwise little change being made between the text of the sixteenth edition and the one now under review. The ability of Professor Remington to describe the art of pharmacy renders his work on the United States Dispensatory most valuable, but this is balanced, on the other hand, by the careful work of Caspari on the National. For the physician we advise the National, for the pharmacist either will be a good purchase.

FOSTER'S ENCYCLOPÆDIC MEDICAL DICTIONARY, BEING A DICTIONARY OF TECHNICAL TERMS USED BY WRITERS ON MEDICINE AND THE COLLATERAL SCIENCES IN THE LATIN, ENGLISH, FRENCH, AND GERMAN LANGUAGES. By Frank P. Foster, M.D. Vol. IV. Illustrated.

New York: D. Appleton & Co., 1894.

At last the final volume of this monument to American learning and industry has been placed before the medical profession by its learned editor and his collaborators, and it will stand for all time as a classic both in the literature of medicine and the collateral sciences. The volume opens with a beautiful plate, showing the normal and abnormal constituents of the human urine. The text of the work extends from Minn to Zyth. The disadvantage which surrounds the use of all small dictionaries is the necessary exclusion of words which are

rarely used and condensations of the definitions which are given. As the name of this book implies, it is encyclopedic not only in its wide scope, but also because it partakes of the nature of an ordinary encyclopædia, in giving full descriptive definitions of nearly all the terms found in its pages. We trust that the work, which has cost so many years of labor and industry, will be appreciated by the profession for which it was prepared. The letter-press and binding are, if possible, even better than in the previous volumes, and are a credit to the publishers of this splendid work.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF MISSOURI at its Thirty-Sixth Annual Session, held at Sedalia, Mo., May 17, 1893. Jefferson City, Mo., 1893.

This volume of the Transactions of the Medical Society of Missouri is extremely creditable to the practising physicians of that State. Among the many valuable papers are to be noted a *résumé* of the Progress of Rectal Surgery, by Potter; a General Summary of Animal Parasites, by Ohman-Dumesnil; and Penetrating Gunshot Wounds of the Abdomen, by Marks. In this latter paper there are reported seventeen cases, with a mortality of a little below thirty per cent., though there was an average of five perforating wounds in each case. All of the papers are of an unusually high degree of merit, and combined in book form will doubtless prove a valuable addition to the surgeon's reference library.

THE YEAR-BOOK OF TREATMENT FOR 1894. Philadelphia: Lea Brothers & Co., 1894.

To those members of the medical profession who have not subscribed to the THERAPEUTIC GAZETTE "The Year-Book of Treatment" affords a useful summary of the therapeutic advances which have been made during the year in a much more brief and therefore more incomplete form than can be found in the twelve numbers of the GAZETTE for the same time. Much of the information which is contained in this volume will necessarily seem a number of months old to readers of this journal, and we are pleased to note that the various editors employed in the compilation of "The Year-Book of Treatment" frequently quote the editorial articles and Progress columns of the GAZETTE. The book itself is to be considered a valuable addition to the actively engaged practitioner of medicine. We notice that, by a curious typographical error, *strophanthus* is said by H. C. Wood to act quickly and "pugnaciously" as compared with *digitalis*. We presume that the word fugaciously is intended.



A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS FOR STUDENTS AND PHYSICIANS. By John H. Musser, M.D. Philadelphia: Lea Brothers & Co., 1894.

Those who have known for some time that Dr. Musser was about to publish a book on this subject, and who have also known his skill as a practical physician, have been looking forward to the appearance of this work. We find it is at once a credit to him as an author and a valuable addition to medical literature. Contrary to our expectations, the work is very considerably larger than the average text-book on this subject, numbering nearly nine hundred pages; but notwithstanding its size, in no portion of it can the reviewer point out redundancy or instances where subject-matter might be readily dispensed with. The whole book impresses one as being the concentration of a very thorough knowledge of all the facts resorted to in the making of a careful diagnosis by means of modern methods. If any criticism can be offered, it is that, in the effort to condense, certain paragraphs lack the clearness in expression which is so necessary in a book for students. Notwithstanding this fact, we are confident that Dr. Musser's book will at once take a prominent and permanent position among the text-books of the medical schools of the country, and we recommend it most highly to those practitioners who wish not only to get the views of the general profession in regard to important points of diagnosis, but who also desire a work in which the author expresses his own opinions, based upon careful observation and wide experience.

AN AMERICAN TEXT-BOOK OF THE DISEASES OF CHILDREN. By American teachers. Edited by Louis Starr, M.D., assisted by Thompson S. Westcott, M.D. Philadelphia: W. B. Saunders, 1894.

The disadvantage of works composed of the writings of many individuals is the fact that the articles are necessarily uneven as to quality and as to scope, and this objection increases in importance in direct ratio to the number of contributors. We cannot understand why so many gentlemen should have been asked to write for a book of less than twelve hundred pages, for no less than sixty-three authors contribute to the volume.

One of the most practical articles of the book is that by the editor, Dr. Starr, upon the investigation of disease and the general management of children, which is followed by a valuable article by Dr. E. P. Davis upon injuries incident to birth and the diseases of the new-born.

The article on malaria, by Thayre, of Balti-

more, is particularly interesting from a pathological and etiological point of view, but disappointingly short in the therapeutic consideration of the diseases under discussion. Dr. Blackader's article upon gastric catarrh and gastric ulcer is also worthy of notice, and the general catarrhal state known as mucous disease is well considered by Dr. Edwards.

The article upon hæmaturia, by Dr. Buckingham, of Boston, is, unfortunately, short, a fault which perhaps could not be avoided in so condensed a work.

A special feature of the book which strikes us as we look through it are the full-page color illustrations, which are singularly accurate.

The volume gives evidence of having been most carefully edited, and reflects credit upon the contributors, the editor, and the publisher.

A MANUAL OF THERAPEUTICS. By A. A. Stevens, M.D. Philadelphia: W. B. Saunders, 1894.

The arrangement of this little book is precisely that of a somewhat larger volume which has been in the market for several years. Part I. deals with the physiological action of drugs, Part II. with drugs themselves, Part III. with remedial measures other than drugs, and Part IV. with articles on diseases. As the book only numbers about four hundred and fifty pages and is a small octavo, it has naturally been impossible for the author to give anything else but very concise statements concerning the subjects treated. Thus, the article upon electricity covers scarcely seven pages, and similar abbreviated articles can be found in many places through the book. Nevertheless, the author is to be congratulated upon having presented the medical student with as accurate a quiz manual of therapeutics as it is possible to prepare, although there are a number of errors in this edition which will probably be corrected in the future ones. The list of general anæsthetics—namely, nitrous oxide, ether, and chloroform—might have been increased in number. The statement that death from chloroform generally results from cardiac failure is, we believe, incorrect, even according to those authorities who are positive in their belief that the drug acts as a cardiac depressant. Methylene blue and methyl blue, although considered as one and the same thing in this book, are not identical.

We regard this compilation as being distinctly better than the previous book of the same size upon the practice of medicine by the same author, but we do not believe that it is sufficiently thorough to take the place of larger works.

DISEASES OF THE RECTUM AND ANUS. By Charles B. Kelsey, A.M., M.D. Fourth edition, revised and enlarged. With two chromo-lithographs and sixty-two illustrations.

New York: William Wood & Co., 1893.

The teachings of this book may be considered as coming *ex cathedra*, since Kelsey is generally acknowledged to be the leading authority on diseases of the rectum and anus. The work is characterized throughout by a certain positiveness of teaching and directness of expression most gratifying to those of lesser experience who seek a reliable guide. Yet, though Kelsey makes his own views prominent and leaves no question as to what these are, he very fairly discusses the value of methods and treatment other than those which he himself prefers.

The first chapter is devoted to points of anatomy and physiology. This section, which might readily have been rendered prolix, is one of extreme interest, from the evident practical and clinical bearing of the points brought out. The second chapter is devoted to general methods of examination and operation and the choice of instruments and appliances, and represents the results of the wide practical experience of the author. These subjects are discussed with satisfactory detail, even the equipment of the surgical bag designed for operations on the rectum receiving careful attention.

Congenital malformations are discussed briefly, most space, as is proper, being devoted to surgical treatment.

The chapter upon fistula is perhaps the one of greatest interest in the work. The author insists that a fistulous tract must be followed by a careful dissection, and must not be laid open by a single sweep of the knife carried in the groove of a director which has been by more or less force made to enter by one opening and passed out at the other. The director need only be introduced a short distance at a time; thus side tracks are recognized as they are met. All such side tracks should be slit up, provided this can be done without the risk of incontinence of feces or destruction of the perineum in women, or too great injury for the reparative powers of the patient. Kelsey states that it is safe to divide both sphincters once in the median line without danger of incontinence. The treatment of horseshoe fistula is most ably discussed. The operation of freshening and suturing the sphincter when incontinence follows its too free division is described. In the treatment of fistula, Kelsey states that he rarely uses any dressing following that applied immediately after operation, but merely introduces a

finger into the wound two or three times a week to secure healing from the bottom. He condemns tight packing.

The chapter upon hemorrhoids is also one of peculiar value. The clamp and cautery represents the method of choice in removing these tumors. The carbolic injections are rejected as not sufficiently radical and as causing more pain than the clamp and cautery. After the clamp operation no dressing is applied, except a pad of oiled lint and a T bandage kept in place for a few minutes to arrest oozing from the preliminary incisions in the skin. Belladonna and opium suppositories are unnecessary. Thirty-six hours after operation a laxative pill or saline should be administered. The following morning an oil enema should be thrown into the rectum.

The Whitehead operation is described, but is not commended. The various operations and treatment most successful in prolapse and invagination are detailed at length. Non-malignant ulcers, venereal diseases of the rectum and anus, non-malignant stricture, and, finally, cancer are taken up in order. All the most recent operations for the relief of rectal cancer are to be found in this work, together with a section on the formation and closure of the artificial anus.

There is a chapter on constipation and fecal impaction, one on pruritus ani and wounds and foreign bodies, and, finally, one upon spasm of the sphincter and neuralgia.

This book is the best practical work on this subject to be found in any language. It is difficult to imagine how it could be improved.

A TEXT-BOOK OF THE DISEASES OF WOMEN. By Henry J. Garrigues, A.M., M.D.

Philadelphia: W. B. Saunders, 1894.

Garrigues is already widely known as an eminently practical gynecologist whose views are not too extreme to be followed by the large mass of his medical brethren who have not become specialists; hence this work of his is quite certain to have an appreciative reception. It is extremely satisfactory to find so much space and so many admirable illustrations devoted to the subject of normal and pathological anatomy. This is a feature worthy of imitation. The classification adopted by the author is one which will meet with favor both from the student and practitioner. The descriptions of special methods and operations are sometimes too brief to be of practical value. In describing the operation of ovariectomy, a rather formidable armamentarium is advised, in all about sixty-eight instruments. The further description of the operation is a very skilful piece of condensation. The book closes with an ap-

pendix on sterility. This subject is ably summed up in a few pages.

The special merits of this work are that it is a book of moderate size, and hence comparatively inexpensive, that it is thoroughly modern, that the subjects are so well tabulated and indexed that reference is easy, that the author's style is singularly concise and clear, and hence that to the ordinary busy man the latest treatment or the latest diagnostic points of any given disease can be discovered at the expenditure of a minimum of time. Moreover, the illustrations are copious and admirable. These merits are such that the work is sure to find a place for itself.

CHIRURGIE DES VOIES URINAIRES. ÉTUDES CLINIQUES.  
Par le Dr. E. Louveau. 2me édition.  
Bordeaux: Feret & Fils, 1894.

This work is arranged on no definite plan, but consists of reports of clinical cases recorded with an attention to detail which sometimes becomes slightly distressing. This book will be of some use to the active genito-urinary surgeon, but to the general practitioner it has but little value. The technique of some of the operations and procedures is interesting and instructive in the extreme. The author is to be congratulated on having produced, if not a text-book on this subject, at least a monument to his patient clinical research.

## Correspondence.

LONDON.

(From our Special Correspondent.)

At a recent meeting of the Physiological Society a communication was made by Messrs. Bokenham and Lewis Jones on the effects of electric-lighting currents on the economy. The authors originally undertook this research in order to get an explanation of the reason why, when a man became involved in an electric-lighting circuit, he was sometimes killed and sometimes suffered but little damage beyond local burns. The most interesting results obtained are those bearing on the mode in which death is caused by the passage of currents at high pressure. By laboratory experiments with guinea-pigs and cats, using a current of one hundred and five volts, they found that it was impossible to kill these animals by passing the current in any direction through the intact skin. To currents of this comparatively low intensity the skin offers such a great resistance as to greatly diminish the amount of

current actually passing through it, and reducing it to a perfectly safe amount. Continued passage of current at even this voltage did at length break down the skin resistance by a process of electrolysis, accompanied by considerable heating effect.

If a current of the same pressure were passed through the skull in any direction, the large electrodes used being applied to two points denuded of skin, still, a fatal result was unattainable. In fact, the only effect noticeable in an animal not too deeply anæsthetized was a partial return to consciousness, together with some stimulation of the respiratory centre and a slight rise of blood-pressure. If, however, the current were applied at points denuded of skin on the two sides of the thorax, so that it passed through the heart, death followed almost instantaneously, being indicated by a brusque fall of blood-pressure and one or two quivering heart-beats, the heart then stopping in full diastole. The respiration, after a very transient great increase of rapidity, ceases,—it may be for a minute,—a few gasping breaths, apparently the result of asphyxia on a not completely exhausted respiratory centre, making their appearance before the final complete relaxation of the animal. It would appear, therefore, that with this voltage, at least, death is due to the effect of the current on a vital organ,—the heart,—not on the central nervous system. If so, it follows that the use of electricity as a state engine of destruction should be directed to the heart rather than to the cerebral centres, as in the present method of electrocution. When, as in the case of capital punishment, currents of extremely high voltage are employed, their penetrating power is so great that the comparatively small resistance of the skin might practically be disregarded. This research is not as yet complete, but enough has been made out to show that the present mode of application of the electrodes for judicial purposes is by no means the best.

While on electrical topics, I may as well mention an innovation which I recently noticed at Moorfields Eye Hospital. Until now the ophthalmoscope-room, which has accommodation enough for about a dozen patients to be examined simultaneously, has been provided only with the old-fashioned and extremely hot Argand burner as a source of light. On account both of the heat given out and the extent to which gas and patients vitiated the atmosphere, a morning of ophthalmoscopic work was an almost certain means of acquiring a bad headache; at least that was my experience, running now over several years. The evils above

alluded to have now been removed in great measure by the introduction of the electric light, which has been rendered suitable for the purpose by the well-known opticians, Curry and Paxton. The difficulty caused by the narrowness of the incandescent filament in the ordinary lamps has been obviated by the introduction of "focal" lamps, possessing many close spiral twists, the globes of these being also gray-ground, so that a good surface of light is obtainable in all positions of the lamp bracket. In order to render this arrangement suitable for the display of vitreous opacities and other appearances which can only be detected by a rather subdued light, the inventor has arranged a series of resistances in the form of a tube embracing the movable arm of the bracket. In order to throw one or more of these into circuit and thus reduce the intensity of the light, all that has to be done is to turn a small milled collar which occupies the usual position of the gas-tap. I have used this arrangement for many hours, both at hospital and in my own consulting-room, and find it most satisfactory and free from the inconveniences which attend the use even of the most perfect gas arrangement.

Can any reader tell me anything as to the significance of a case which I observed only a few days ago? The patient, a child of about nine years old, was brought in complaining of defective vision. On ophthalmoscopic examination, two or three largish pigmented patches, distinctly raised, were found, almost symmetrically arranged to the temporal side of the disk. I certainly had never seen a case like it before, and several who have seen it have expressed the opinion that the patches seen are retinal moles. What is their pathological significance?

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### Notes and Queries.

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#### CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS. THIRD TRI- ENNIAL SESSION.

WASHINGTON, D. C., March 8, 1894.

#### CIRCULAR NO. 1.

The Congress meets in Washington, D. C., May 29 to June 1, inclusive. It is composed of the members of those national medical societies whose names and secretaries are given below, and of guests specially invited by the Executive Committee.

To enable a physician residing in the United States to become a member of the Congress,

with the right to participate in its proceedings, it is necessary that he be a member of one of these constituent national societies.

A physician may be accredited as a visitor to the Congress by any one of the constituent societies. The certificate of the secretary of one of these societies to the effect that he is thus accredited will enable him to register upon payment of the registration fee, which registration will entitle him to a card of admission to the reception and to a copy of the Transactions of the Congress, but not to take part in the deliberations of the Congress.

The following are the names of the constituent societies in the order of date of their organization, and the names and addresses of their respective secretaries, to whom inquiries as to mode of obtaining membership should be addressed:

American Ophthalmological Society, Secretary, S. B. St. John, M.D., Hartford, Conn.; American Otological Society, Secretary, J. J. B. Vermyne, M.D., New Bedford, Mass.; American Neurological Association, Secretary, Graeme M. Hammond, M.D., 58 West Forty-sixth Street, New York City; American Gynecological Society, Secretary, H. C. Coe, M.D., 27 East Sixty-fourth Street, New York City; American Dermatological Association, Secretary, Charles Warren Allen, M.D., 640 Madison Avenue, New York City; American Laryngological Association, Secretary, Charles H. Knight, M.D., 20 West Thirty-first Street, New York City; American Surgical Association, Secretary, J. R. Weist, M.D., 118 North Eighth Street, Richmond, Ind.; American Climatological Society, Secretary, J. B. Walker, M.D., 1617 Green Street, Philadelphia, Pa.; Association of American Physicians, Secretary, Henry Hun, M.D., 33 Elk Street, Albany, N. Y.; American Association of Genito-Urinary Surgeons, Secretary, J. A. Fordyce, M.D., 66 Park Avenue, New York City; American Orthopædic Association, Secretary, John Ridlon, M.D., 103 State Street, Chicago, Ill.; American Physiological Society, Secretary, W. P. Lombard, M.D., Ann Arbor, Mich.; Association of American Anatomists, Secretary, D. S. Lamb, M.D., 800 Tenth Street, Washington, D.C.; American Pediatric Society, Secretary, Samuel S. Adams, M.D., 1632 K Street, Washington, D.C.

All physicians are invited to attend the meetings of the Congress and the public meetings of the societies, but only those may register who are members, specially-invited guests, or visitors accredited through the secretaries of constituent societies.

The registration office will be in Parlor I of The Arlington. From this office the mail of members and invited guests will be distributed, and here the city address of each member, guest, and accredited visitor can be ascertained. All members, invited guests, and accredited visitors should register as soon as possible.

A registration fee of five dollars will be required of all members and accredited visitors. Invited guests will register, but will pay no registration fee. A copy of the published Transactions of the Congress will be sent to all members, and to each invited guest and accredited visitor who is registered.

Only those who register, and the ladies accompanying them, will be admitted to the reception.

It is recommended that members effect registration in advance of the meeting by filling out the blank certificates of registration which will be sent to each member about May 15, and forwarding these certificates, with the requisite fee, to Dr. John S. Billings, Treasurer of the Congress.

The sessions of the Congress will be held from 2 to 5 P.M., daily, in the Metzgerott Music Hall, corner of Twelfth and F Streets.

The sessions of the societies will be held according to the programmes of each, as follows:

American Ophthalmological Society, Ladies' Parlor, No. 2, The Arlington; American Otolological Society, Ladies' Parlor, No. 1, The Arlington; American Neurological Association, Cosmos Club; American Gynecological Society, Lecture Hall, Columbian University, corner Fifteenth and H Streets N.W.; American Dermatological Association, New Reception-Room, The Arlington; American Laryngological Association, Parlors D and E, The Arlington; American Surgical Association, Main Hall, Preparatory Department Columbian University, H near Fourteenth Street; American Climatological Association, Parlor, Wormley's Hotel; Association of American Physicians, Hall No. 2, Columbian University, corner Fifteenth and H Streets; American Association of Genito-Urinary Surgeons, The Shoreham; American Orthopaedic Association, Preparatory Department Columbian University, H near Fourteenth Street; American Physiological Society, Physical Laboratory Columbian University, Fifteenth and H Streets; Association of American Anatomists, Preparatory Department Columbian University, H near Fourteenth Street; American Pediatric Society, Parlors A and B, The Arlington.

The President of the Congress, Dr. Alfred L. Loomis, of New York, will deliver an address Thursday evening, May 31, at 7.30 P.M. Subject: "The Influence of Animal Experimentation on Medical Science."

The Executive Committee has decided that the Congress shall give a dinner on Wednesday evening, May 30, at The Arlington, to which its guests will be invited. It being its desire to make this a general affair, it is hoped that all members of each of the constituent societies will subscribe to it. The subscription, *ten dollars*, should be sent to the chairman of the Committee of Arrangements as early as possible, to avoid confusion. The list must be closed by May 25.

No provision having been made for Tuesday evening, May 29, that evening is at the disposal of the different societies for business or social purposes.

The committee will take pleasure in answering any inquiry relating to the local arrangements of the Congress.

#### OFFICERS OF THE CONGRESS.

*President*, Alfred L. Loomis, M.D.

*Vice-Presidents, ex officio*, Presidents of Constituent Societies.

*Chairman of Executive Committee*, Landon Carter Gray, M.D., New York City.

*Treasurer*, John S. Billings, M.D., Washington, D.C.

*Secretary*, William H. Carmalt, M.D., New Haven, Conn.

#### COMMITTEE OF ARRANGEMENTS.

Samuel S. Adams, M.D., *Chairman*, 1632 K Street N.W., Washington, D.C.; John S. Billings, M.D., Army Medical Museum, Washington, D.C.; W. W. Johnston, M.D., 1603 K Street, Washington, D.C.; Irving C. Rosse, M.D., The Albany, Washington, D.C.; S. O. Richey, M.D., 732 Seventeenth Street, Washington, D.C.; J. Taber Johnson, M.D., 1728 K Street, Washington, D.C.; William H. Welch, M.D., Johns Hopkins Hospital, Baltimore, Md.; I. E. Atkinson, M.D., 605 Cathedral Street, Baltimore, Md.; T. Morris Murray, M.D., 730 Seventeenth Street, Washington, D.C.; D. W. Prentiss, M.D., 1101 Fourteenth Street, Washington, D.C.; Samuel Theobald, M.D., 304 Monument Street, Baltimore, Md.; Henry G. Beyer, M.D., Naval Academy, Annapolis, Md.; De Forest Willard, M.D., 1818 Chestnut Street, Philadelphia, Pa.; Frank Baker, M.D., 1315 Corcoran Street, Washington, D.C.

### THE INDIAN MEDICAL CONGRESS.

The proposal to have a Medical Congress in India was considered at a meeting of the Council of the Calcutta Medical Society on January 24, when it was decided that an "Indian Medical Congress" shall be held in Calcutta at the beginning of January, 1895. The preliminary arrangements were discussed and a general plan sketched out. It was decided that in each province local secretaries, native as well as European, should be asked to co-operate with the Calcutta secretaries, and it was further decided that the sections into which the Congress should be divided should be,—

1. Medicine, including Pathology.
2. Surgery.
3. Obstetrics and Diseases of Women and Children.
4. Public Health.
5. Medico-Legal Medicine and allied Subjects.

Further details will be given in a future issue. It was decided that the Congress should be widely advertised, and that all medical men practising in every part of the world, but especially in India and the East, should be invited to take part in it and submit papers to be read in the different sections.

### AMERICAN MEDICAL ASSOCIATION.

The Committee of Arrangements has secured Odd Fellows' Hall Building, corner Market and Seventh Streets, San Francisco, Cal., for the meeting June 5, 1894.

Assembly Hall, for the general meeting, has a capacity of fifteen hundred; the twelve smaller halls, for section work, range in capacity from five hundred downward, with committee-rooms adjacent.

The engagement carries three of these rooms on Monday for accommodation of associate organizations, as that of the editors, colleges, etc.

The banquet-room on the ground floor, sixty-five by ninety-five feet, will be devoted to exhibition purposes, for which it is admirably adapted, and has been secured for the entire week, that exhibitors may have Monday in which to place their goods and Saturday in which to remove them. Nearly half of the space is already taken, and others who desire to make a display of their goods under the most auspicious circumstances ever presented on the Pacific coast should lose no time in applying to the chairman for space.

Head-quarters for the Association have been

located at the Palace Hotel, corner Market and Montgomery Streets, only four blocks from the place of meeting. Here we have "Marble Hall," thirty by forty feet, as a registration-room, where work will begin on Monday, and "Parlor A" for committee work.

The following hotels, centrally situated and convenient to the place of meeting, have quoted special rates for members and their families, which will apply during the entire stay of the guests, who should, upon registering, signify that they are in attendance upon the meeting of the Association.

The rates quoted are for single persons, the variation depending upon the size, situation, and appurtenances of the rooms, as single, *en suite*, with private bath, etc. Special arrangements will be made for families or parties on timely notice.

Some of the hotels entertain upon the American plan only, some upon the European plan only, and some upon either plan to suit guests.

Palace Hotel (head-quarters), American plan (rooms and board), \$3.50 to \$5.50 per day; European plan (rooms only), \$1.50 to \$3.50 per day.

Baldwin Hotel, American plan, \$3.50 to \$5.00 per day; European plan, \$1.00 to \$3.00 per day.

California Hotel, American plan, \$3.50 and up per day; European plan, \$1.50 and up per day.

Lick House, American plan, \$2.50 and up per day; European plan, \$1.00 and up per day.

Russ House, American plan, \$2.00 to \$3.50 per day; European plan, 50 cents to \$2.00 per day.

Occidental Hotel, American plan only, \$2.50 and up per day.

Hotel Pleasanton, American plan only, \$2.50 to \$5.00 per day.

Grand Hotel, connected with the Palace by a glass inclosed bridge across New Montgomery Street, European plan only, \$1.00 to \$2.00 per day.

In addition, there are many other hotels, boarding-houses, lodging-houses, and restaurants contiguous to the place of meeting, where one can be made happy and comfortable at less cost.

Post-office, Section K, is located in the Palace Hotel, on the office floor, adjacent to the registration-room, where members can receive all mail matter by having it so addressed.

More anon,

R. H. PLUMMER,

Chairman.

# THE Therapeutic Gazette.

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Vol. XVIII.

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## Original Communications.

### PILOCARPINE IN ERYSIPELAS.

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THE recent article on pilocarpine administered hypodermically in erysipelas,\* by Dr. Salinger, has its main facts corroborated in my own experience. In 1883 I heard Professor J. M. Da Costa teach the use of pilocarpine carefully administered for this disease,

and have used it ever since with the most gratifying results. It has failed but once in my hands, and then probably for reasons which will be elaborated later. After a small experience with the method of dynamic doses administered at regular intervals, I am constrained to retain the details of Da Costa's method as giving best results. This is the administration of a dose sufficient to produce a marked physiological action, repeated in two hours, again in six hours, and finally in two hours more—i.e., in two, eight, and ten hours from the initial dose—with the hypodermic syringe. I think I have discovered that the efficacy of this treatment depends upon the time which has elapsed from the inception of the first symptoms of the

\* THERAPEUTIC GAZETTE, March 15, 1894, p. 154.

disease. My most brilliant successes have been in the cases seen very early, and the only failure in a case of a week's standing, while the time required to effect a cure has been in direct ratio to the duration of the disease before the treatment began. The rule has been that in twelve hours from the first injection local convalescence is established and the systemic symptoms are rapidly disappearing. In cases seen later it has been necessary to repeat the whole procedure after an interval of six or eight hours from the last dose. In no case, except the one mentioned, has it been necessary to further repeat the hypodermic injections, although I continued fluid extract of pilocarpus per orem in a number of cases as a precautionary measure. The average duration of the disease has been about three days. In one case erysipelas attacked the location of an epithelioma as large as an egg upon the cheek of an old man, the symptoms being typical and well marked, and the characteristic inflammation of the skin extending over the frontal region. The objective inception occurred one evening; the extension of the skin pathology had reached the above extent by noon of the next day, when the treatment began. Twenty-four hours afterwards the disease had apparently disappeared, and a day later, or forty-eight hours after the acme of the objective signs, I removed the superior maxillary bone, which I found involved by the epithelioma, as well as much of the cheek; there was no return of the erysipelas. I have noticed no difference in the results in cases certainly traumatic from those in cases apparently idiopathic.

The dose used has been sufficient to cause sweating and salivation, and  $\frac{1}{6}$  grain usually in the beginning. In the case in which it failed the drug was pushed as far as the cardiac depression would allow. In different individuals pilocarpine produces a variable amount of effect upon secretion in the skin and the salivary glands, sometimes one and sometimes the other dominating. I have been unable to distinguish a difference of therapeutic effect, depending upon the quantity of perspiration as distinguished from the quantity of saliva excreted. When the dynamic action of the drug was manifested by great salivation and little perspiration, the remedial effect was apparently the same as when the perspiration was great in quantity and the salivation less; this seems to dispose of the hypothesis of Salinger that the sweat washes out the bacilli through the enlarged pores. How the drug cures erysipelas I have been especially anxious to discover; it has been an unsuccessful quest. It seems prob-

able that somewhere in the sympathetic nervous system the secret is hid, but each hypothesis has been discarded in turn. Perhaps light will ultimately come through the pathologist and more definite data about the disease.

I have been surprised at finding practically nothing in medical literature on this subject. No claims to originality are made. I learned the method from Da Costa's lectures in the Jefferson Medical College, and as Salinger gives him credit as the originator, to him is the honor due. To corroborate the clinical experience of Salinger and to emphasize the necessity of full dynamic doses, repeated at certain intervals, and the early initiation of the treatment, is the object of this paper, which is based on about forty cases.

#### *THE DIFFERENT FORMS OF DIABETES MELLITUS, WITH REMARKS ON TREATMENT.*

A CLINICAL LECTURE DELIVERED AT THE PHILADELPHIA HOSPITAL, WITH ADDITIONS FROM A CLINICAL LECTURE DELIVERED AT THE POLYCLINIC HOSPITAL.

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**G**ENTLEMEN:—These two patients are brought before you that they may be compared and contrasted. What is the first point of difference between them noted by the class? Some one answers correctly that one is very stout and the other very thin. What other difference is there? Again, I am correctly answered that the stout patient appears to be much older than the thin patient. Inquiring now for specific data as to these differences in age and weight, we learn that Philip M. is sixty-seven years old, and weighs now, as for many years, two hundred and five pounds; while Peter M. has not quite completed his thirtieth year of life, and weighs at present but one hundred and twenty pounds, having lost about sixty-five pounds in some eighteen months.

Peter is a native of Ireland. His father, always strong and hearty, died of an acute illness, the nature of which he does not remember. His mother died of old age. So far as he knows, there is no history of gout, rheumatism, cancer, consumption, or neurosis in the family. It will not do, however, to lay too much stress on negative evidence in the cases of patients of this class. Peter has been a hard drinker for ten years. Beer is his "favorite vanity," and he used to get drunk



regularly every fortnight. He denies any venereal disease, and we find no evidence of syphilis. For several years, in the course of his daily work as a wagon-driver and stevedore, he has been exposed to all vicissitudes of weather. He fractured his right humerus sixteen years ago and again three years ago. With this exception, he knows of no serious illness or injury previous to the gradual loss of strength and weight, which he dates back about two years. Until then he had weighed one hundred and eighty-five pounds, was strong, and considered himself healthy. After he began to fail he noticed that he was passing water more frequently and in greater quantity than formerly. He was troubled with inordinate thirst, that neither beer nor water could quench. Six months ago his craving for food became similarly insatiable.

While general feebleness has been progressive, for about a year there has seemed to be especial weakness in the muscles of the legs. He is quickly fatigued by walking or by mounting stairs, and recently he complains of almost constant dull, aching pain from the knees down. For some three months there has been soreness and a sense of muscular feebleness in the lumbar region, and sexual power has been lost for about the same length of time.

He had not sought medical aid prior to his admission to this hospital, February 2, 1894, when the following notes of his physical condition were made by the resident physician, Dr. Stewart:

"The patient is moderately tall and slim, even emaciated; weight, one hundred and twenty pounds. The bony framework of the chest is prominent through loss of soft tissues. There is much depression both above and below the clavicles. The circumference of the chest at the nipple line, on forced expiration, is thirty-two and a half inches; on forced inspiration, thirty-three and a half inches. There is an up-and-down movement of the thorax as a whole, and breathing is principally diaphragmatic. There is supraclavicular dulness, especially on the right. There is some fulness of the chest, anteriorly, above the nipple line, and percussion elicits high-pitched tympany, more marked upon the right. Percussion note is impaired below the nipples on both sides. Posteriorly, there is hyper-resonance on percussion over both sides of the chest. On auscultation there is found over the upper portion of both lungs, anteriorly, bronchial breathing, with much-prolonged expiration; the quality is more tubular at the left. Over the lower portion on both sides the breathing is harsh and

somewhat puerile in quality. Posteriorly, the breathing is exaggerated, and there are a few sonorous râles at the left upper chest. Vocal resonance is exaggerated, especially over the upper part of the right chest, anteriorly, and vocal fremitus is likewise increased. Liver dulness is diminished. Splenic dulness cannot be well made out. Cardiac dulness is slightly diminished. The apex-beat of the heart is feebly discernible on inspection and palpation, in the fifth interspace, slightly inside the nipple line. The heart's action is rapid (84) and feeble. The first sound is short and impure, wanting in clearness and force, and the second sound, while relatively accentuated, lacks tone. There is general muscular wasting, especially in the legs. The grasp of the hands is enfeebled. There is no tactile, dolorous, or thermic anæsthesia. Knee-jerk is lost on both sides. Muscle-jerk can be developed on right side, but is absent on left. There is no ankle clonus. Pain is complained of, and there is tenderness to pressure in both calves and in the thighs along the course of the sciatic nerves. The soles of the feet are exquisitely tender, and the patient states that they frequently 'fall asleep,' with tingling as of 'pins and needles.' There is no pain or tenderness in the upper extremities. The site of fracture at the lower third of right humerus is marked by considerable callus. Gait and station are normal. There is no vertigo or loss of vision. There is no pruritus."

He tells us that he has not had furuncles or ulceration of the throat. He has an easy daily stool. His tongue is red at the edges, flabby, and coated with a whitish fur, in which appear bare, red, glazed patches. He has some belching, water-brash, and flatulence, though these symptoms have lessened since his diet was regulated.

Now, what further data do we need before diagnosing this case? A member of the class answers, "The urine should be examined." And what would you expect to find in the urine? "Sugar, and possibly albumin and casts," is the correct reply. We have not found albumin or casts, but we have found a large quantity of sugar, within a small fraction of ten per cent. before regulation of diet and nearly six per cent. since the diet was restricted. As the man passed two hundred and fifty to two hundred and sixty-five ounces of urine, and is still passing about one hundred and sixty ounces, daily, this means an average daily excretion of nine and a half ounces of sugar, even under dietetic treatment.

The diagnosis, then, is, as the class sug-

gests, *diabetes mellitus*; but we have also some complicating conditions." The pain, tenderness, and disturbances of sensation in the lower extremities, together with the loss of knee-jerk, point to a polyneuritis which may be alcoholic in this instance, but which is not uncommon in diabetics. Indeed, double sciatic neuritis, such as this patient presents, should always make the physician suspect the existence of *diabetes mellitus*. We will have electrical examination of the muscles made for completeness of record. The pulmonary conditions seem at first somewhat confusing and contradictory. On further questioning, the man tells us that he has had shortness of breath on exertion for some time, and that it is increasing, but he has attributed this to general weakness. He likewise answers that he has occasional cough and expectoration. Dr. Stewart supplements this with the record of examination of the sputum, which is, however, negative,—that is to say, neither lung-tissue nor tubercle-bacilli were found. The sputum is muco-purulent. I think we are justified, from the physical and rational signs taken together, and with our knowledge of the usual course of events in diabetes, in concluding that there is beginning tuberculous infiltration in the emphysematous lungs of this patient. This combination of tubercle and emphysema will account for the apparent contradictions in the percussion phenomena. The heart is evidently dilated, and probably as a result of three causes,—emphysema, diabetes, and alcoholism. The liver is probably cirrhotic as a result of alcoholism. As yet there is no œdema and no ascites. The combination of diabetes and cirrhosis of the liver is not common, and is, I think, a mere coincidence. Conditions leading to enlargement of the liver are more frequently causally related with diabetes. I should not be surprised to find evidences of nephritis, but they have not yet been discovered. We will have his eyes examined to see whether he has either albuminuric retinitis or any of the characteristic lesions of diabetes.

Philip M. is a German by birth, is sixty-seven years of age, and has been a shoemaker. He, too, has generously indulged his liking for beer. The record states that he drank fifty or sixty glasses a day, but I don't suppose that means every day. At all events, he hasn't had anything like that much since his entrance into the hospital, April 12, 1893.

At that time he complained of dyspepsia, shortness of breath, and hemorrhoids. He then stated that his father had been affected similarly, and had died at the age of fifty-nine.

His mother had been subject to attacks of dyspnoea, and died from an unknown cause. Two brothers were living, one healthy and one in about the same condition as himself. He knew nothing as to hereditary diseases in his family. He states that he has had none of the diseases of childhood. As a young man he had a severe attack of acute articular rheumatism, and ever since has had milder attacks at varying intervals. Ten years ago he had lobar pneumonia. At different times during the last fifteen years he has had œdema of the lower extremities. At one time—we can get no more definite data—he had epileptic attacks, falling unconscious, frothing at the mouth, biting the tongue. The attacks were preceded by an aura, a "warm wave" passing up the back of his neck to his head. They were followed by transient loss of vision. He has had no attack for two years.

At the time of admission the physical examination of the patient showed the liver to be considerably enlarged, smooth, and resistant. The heart was slightly enlarged, slow, and feeble, the sounds indistinct. My colleague, under whose care he came, made a diagnosis of fatty liver and fatty heart, and instituted appropriate treatment. Nothing significant was found in the urine until some six months ago, when, in the course of routine examination, it was found to contain considerable sugar. There was not then, and is not now, excessive thirst; appetite is good, but not inordinate; there has been no furunculosis, no ulceration of mucous membranes, no pruritus. There is polyuria, ninety to one hundred ounces *per diem*, but it appears that the patient had not noticed this fact until told to measure his urine before dieting and after dieting. At present there is about two and eight-tenths per cent. of sugar in the urine.

The diagnosis, therefore, as in our other case, is *diabetes mellitus*; but unless the urine had been examined in regular course, there was nothing in the clinical history of the case, so far as learned from the patient, to suggest this condition, which has apparently developed since the patient's entrance into the hospital.

We will now allow the patients to leave the room, and continue our discussion of the resemblances and contrasts they exhibit. Both present the urinary phenomena of *diabetes mellitus*,—that is to say, they both persistently pass an abnormally large quantity of urine, which persistently contains sugar. Beyond this, however, there is little in common in the two cases. Philip passes only about twice the normal quantity of urine, and the average quantity of sugar

excreted daily is less than three ounces ; neither thirst nor appetite is excessive ; he is apparently well nourished, and despite the serious organic lesions discovered in his case his countenance does not exhibit any sign of distress. Peter passes an average of one hundred and sixty ounces of urine and nearly ten ounces of sugar daily. He is tormented with inappeasable thirst and with a craving for food that cannot be satisfied. He is rapidly wasting, his strength is failing, and anxiety is plainly written upon his face.

The French writers especially insist upon the difference between diabetes in the obese and diabetes in the emaciated, and that difference, it is held, is not merely one of degree, but of kind. Thus, in the cases before us it seems extremely probable that the nutrition of one patient has not suffered so much and that of the other so little in comparison merely because the one has a "more severe case" than the other of the same morbid process ; but that the differences in the general clinical phenomena in the two cases are fundamentally connected with the emaciation in the one case and with the obesity in the other case ; and that the morbid process in the case of the young and wasted man is unlike that in the case of the elder, well-preserved man. In other words, glycosuria, or the combination of polyuria and glycosuria, does not constitute a disease, but, like albuminuria, is merely a symptom that may occur in connection with several diseases, and the entire phenomena of the case—the rational symptoms—must be taken into consideration in diagnosis, prognosis, and treatment. All of the causes that may give rise to diabetes mellitus have not yet been discovered. It has followed infectious diseases, malaria in rare instances, influenza and syphilis more frequently. In such cases there is at least a remote toxic origin, but the mediate mechanism may be neural or visceral. So, too, in a class of cases frequently met with,—those in which the uric-acid diathesis or gouty dyscrasia seems to bear a causative relation to temporary glycosuria or to persistent saccharine diabetes,—while the noxa in the blood and tissues may be a remote excitant of the diabetic complexus, the mechanism of its production is probably neural or visceral, or, perhaps more correctly, neuro-visceral. When it shall have been decided whether or not gout is a neurosis, and what are the true relations of gout with disease of the liver, and whether hepatic disorder in gout is secondary to nervous disorder or the reverse, the problem in relation to diabetes will likewise be simplified. For diabetes may be produced ex-

perimentally through the liver or through the nervous system, or through the liver by way of the nervous system, as in Claude Bernard's celebrated experiment, and pathologically it is sometimes found associated with hepatic disease and sometimes with disease of the brain or of the sympathetic nervous system. Sometimes, however, no significant lesion is found at necropsies upon the subjects of diabetes.

But there is still another organ of great importance in the study of the etiology and pathology of diabetes, and more particularly in relation with what the French term *diabète maigre*,—diabetes with emaciation. That organ is the pancreas. Lancereaux long ago called attention to the comparative frequency with which lesions of the pancreas were found in cases of *diabète maigre*, and the recorded instances of such association are rapidly accumulating. When we remember that diabetes is not a common disease, though my personal experience would lead me to believe that its frequency is much underestimated and that many cases go unrecognized ; when we remember, too, that necropsies are not always to be obtained, the number of recorded cases exhibiting pancreatic disease seems to be comparatively large. The lesion is usually sclerosis,—that is, interstitial pancreatitis,—with atrophy of the glandular tissue, and frequently with the presence of calculi and sand. Sometimes the duct of Wirsung is completely blocked with calcareous matter. Cystic and cancerous disease of the pancreas have likewise been associated with glycosuria and with diabetes mellitus. Furthermore, experiments made by Martin, Lépine, Von Mering and Minkowsky, and others have established the fact that, in dogs, extirpation of the pancreas, or artificial production of complete atrophy of the gland, will cause diabetes mellitus, while if a certain-sized portion of the gland be left uninjured, or if a graft of a certain-sized portion of pancreas be made in the abdomen of the animal, these symptoms either fail to develop or rapidly disappear. It has been claimed by Thierloix that injury to the semilunar ganglion, to the solar plexus, or to the nerves connected with the pancreas has had much to do with the experimental results cited ; but while he has proved that such injury may give rise to diabetes, the other experimenters named have apparently proved that diabetes may likewise be produced when injury to nerves has been carefully guarded against. So that present evidence goes to show that destruction of the pancreas, or of certain neighboring and attached nerves and ganglia, or of both pancreas and nervous structures, will cause in dogs

polyuria, glycosuria, polyphagia, and polydipsia, with progressive inanition and death; in other words, the phenomena of diabetes mellitus.

In the human being, general experience seems to show that diabetes in obese patients is usually gouty or hepatic in origin; in emaciated patients it is usually associated with nervous or pancreatic lesion, or, according to Thiroloix, is always neuro-pancreatic.

In such subjects, when a toxic origin cannot be assigned, and I include alcoholism among toxic causes, it will usually be found that they have been much exposed to cold weather, or that they have been subjected to severe mental or emotional strain, often, in the case of men, to both mental and emotional strain, as in the conduct of large enterprises involving overwork, anxiety, and fluctuations of spirit due to alternations of success and disappointment. The disease, it is true, is more common among women than among men, but if I may trust my own experience, women are more likely to exhibit the type of *diabète gras*,—diabetes with obesity. Thus, of seven diabetics now under my care in hospital and private practice, three are men, four are women; five are obese, of whom two are men and three are women. You have just seen one of the emaciated patients, and the other is not only the only woman exhibiting *diabète maigre* whom I have seen in the last five years, but she is a woman of business, of great activity. A farmer's wife, she runs the farm and a hennery and a dairy; comes into market twice a week, and stands there from early morning to late afternoon, disposing of her produce; and, until I forbade it, was in the habit of beginning her market-day drives into the city at three o'clock in the morning. She will not give up any of her work. The most that I could do was to get her to come to town the afternoon before market-day. I mention these details simply to show the type of persons who are liable to *diabète maigre*. One other point is worthy of mention. She has always had a great craving for sweet things, and you will often elicit this fact in men as well. I am not prepared to say positively whether this craving is itself an early indication of morbid tendency, or of actual disease too slight to give rise to urinary symptoms, or whether the indulgence in sweets is one of the factors that help to cause the disease in nervous persons; but I am more inclined to the opinion that the craving is from the first morbid. At all events, the fact is worth remembering. It is said, and I believe with reason, that persons of the Hebrew race are especially liable

to diabetes mellitus. The explanation of the fact lies, I believe, in the high nervous tension caused by the centuries of persecution to which my people have been subjected, together with the greater development of mental and emotional than of physical nature which has always characterized them. But the strain of modern business life, especially in America, is causing diabetes to increase among all classes of the population, and in my own practice the number of Jews affected with this disease has been far less in actual count and no greater in proportion than that of persons of other races.

To return to our two patients. The difference in years between them is of great import in prognosis. Persons in whom the symptoms of diabetes mellitus develop before the age of forty recover so rarely that we may say the prognosis is absolutely bad. Persons who have passed the fortieth year of life before the symptoms develop recover so frequently that we may call the prognosis generally good. In both classes of cases, of course, individual conditions must be considered in estimating the degree of the favorable or unfavorable prognosis. Thus, while I have used the case of Philip M. in illustration of a certain group of cases in which the prognosis under favorable surroundings is usually good, yet the complications of the case and the comparatively large excretion of sugar which recurs from time to time make it of rather more serious prognosis than is usual in obese and elderly patients.

But before going further, let us see what we mean by recovery. Some cases are so mild that by simply instituting certain dietary restrictions, sugar disappears from the urine and the patient's general health and comfort are fully restored. Other cases require in addition some medication, temporary or continuous. Let the patient, however, disregard the dietary restrictions for any length of time and all the symptoms will return. There are exceptions to this rule, of course, but it is the general experience in the vast majority of cases of genuine diabetes mellitus. There are cases of mere temporary or intermittent glycosuria, or even glycosuria and polyuria, occurring, as a rule, in the obese, the elderly, and the gouty, and usually due to overeating, quantitative or qualitative, in which temporary restriction in diet will suffice, but we are not now considering such cases. By recovery, therefore, I mean a condition in which, under moderate dietetic restriction, sugar is absent from the urine, which is of normal quantity, and the patient is generally comfortable; but in which serious dietetic error will nevertheless bring about a renewal of symptoms. There is also a

condition of partial recovery, in which the patient continues to excrete a moderate quantity of sugar, say one or two per cent., the quantity of urine being slightly increased, say two quarts or a little more, and yet general health is apparently good. Patients may live to or beyond the Scriptural limit of threescore years and ten under these conditions, and probably in some instances their days are rather lengthened than shortened by their diabetes, because of the additional care they take of themselves. Now, provided the patient can and does take proper care of himself, the prognosis as to recovery or partial recovery, as I have defined these terms, is excellent if the patient be somewhat advanced beyond middle life when symptoms first appear, and good in all who have passed forty-five years, in the absence of specially unfavorable signs in the individual case. As a rule, the older the patient the better the prognosis, the younger the patient the worse the prognosis. Furthermore, the preservation of obesity is favorable, emaciation is unfavorable. Certainty that the case is of organic nervous origin is unfavorable, and functional neurosis is likewise unfavorable unless the exciting cause of nervous trouble—the overwork or anxiety—is removable; in which case, if the removal of the cause be not too late, the prognosis may be very good. Cases due to disease of the pancreas are of unfavorable prognosis. As a matter of course, the severity of special or general symptoms and the effect of diet and of other therapeutic measures modify the prognosis in individual cases.

The causes of death are most frequently pneumonia, pulmonary tuberculosis, and coma. The duration of unfavorable cases is from a few days to about five years, and I have known of favorable cases in which symptoms have been recognized for more than twenty years. In every case we must be on the alert to guard against coma, which may sometimes be precipitated by trifling causes, such as indigestion or slight chilling. In one case under my care the patient lay in a semi-comatose condition for three days following an attack diagnosed by the previous attendant, a homœopathist, as "malaria," but which seemed to me to be an instance of the intermitting variety of influenza. This patient, I was told, had passed sugar in her urine for fifteen years prior to the attack noted, which occurred three years ago, and she is still living and well. What warned me to expect coma and to try to guard against it was the sudden disappearance of sugar from the urine. This is always a bad sign, not a good one. At the same time the urine reacted

with ferric chloride, showing the presence of diacetic acid or  $\beta$ -oxybutyric acid, and was scanty in quantity. The therapeutic indication was the administration of warm drinks, alkaline diuretics, and diaphoretics, and the application of heat externally. Persistence in this course averted the development of complete coma, which would probably have been the precursor of death.

Throughout the management of a case of diabetes mellitus, therefore, examine the urine at regular intervals, not too far apart, and whenever its acidity increases, or the sugar is suddenly diminished or absent, or the wine-red color is developed by ferric chloride, administer alkalies freely until the urine is alkaline and the sugar reappears. Sodium bicarbonate may be given, or, if the quantity of urine is lessened, potassium acetate or potassium citrate, or some other diuretic. Some authorities, however, caution against potassium salts, believing them to be too depressing to the heart. Rochelle salt is often useful, because it will act either as a mild hydragogue purge or as a diuretic. And this leads me to say that constipation is often a precursor of diabetic coma, perhaps a cause. Never permit your patients, then, to be constipated. I am in the habit of giving to diabetic patients sodium phosphate in bulk, and directing them to take one or two teaspoonfuls in hot water before breakfast, or perhaps even two or three times a day, the quantity and frequency to be varied according to the effect upon the stools. Bartholow, indeed, recommends sodium phosphate as a remedy for diabetes mellitus, especially in obese subjects with hepatic disorder. Sometimes he combines with it sodium arsenate,  $\frac{1}{4}$  grain to the drachm of sodium phosphate. This is a useful expedient. Arsenic is itself useful in the treatment of diabetes mellitus. Lithium salts and various alkaline mineral-waters are useful to keep the secretions active and neutralize acidity. Recently I have been using the salts of strontium, and especially strontium bromide, in the treatment of lithæmia and in the treatment of diabetes mellitus in the gouty and obese. In doses of about 30 grains, with 20 drops of glycerin, and infusion of gentian to make a tablespoonful, three times a day, before meals, I have found this drug of great service. It is a stomachic tonic, promotes digestion and relieves flatulence, increases general nutrition, and quiets the nervous system; at the same time it keeps the blood moderately alkaline. It can be given for much longer periods continuously than is safe with potassium salts, and is not contra-indicated in lithæmic cases, as

most sodium salts are. Strontium lactate is likewise used, but I prefer the bromide. In gouty and rheumatic cases especially, but likewise in hepatic cases, sodium salicylate is useful. It can be alternated with strontium bromide, and I am in the habit of giving it for a week or two whenever the patient complains of arthritic or muscular pains. I prefer to give it in capsule, followed by an ounce or two of water, the dose being from 5 to 15 grains three times a day. From time to time strychnine arsenate,  $\frac{1}{12}$  grain six times a day, is given as a general nervous tonic-stimulant.

In the case of emaciated patients, or in obese patients temporarily when the sugar is excessive and does not yield to other measures, I prefer codeine to any other drug. The dose is from  $\frac{3}{8}$  grain to 12 grains or more daily. It is to be given first in small doses, increased until the point of tolerance is reached or improvement is manifest, and then decreased to the smallest dose at which the gain made can be held. Following Sir B. W. Richardson, I give it in solution with hydrogen dioxide, in some such mixture as this:

Codeine phosphate, gr. ii;  
 Alcohol, f3iv;  
 Dilute phosphoric acid, f3ii;  
 Glycerin, f3vi;  
 Solution of hydrogen dioxide (10 volume),  
 enough to make f3iii.  
 Dose.—2 teaspoonfuls in 3 ounces of water.

With this an alkaline course is usually conjoined, the patient being given some suitable mineral-water. Arsenic is sometimes added. Hydrogen dioxide, potassium permanganate, ozonic ether, and oxygen have been advocated on chemical grounds in the treatment of diabetes. I believe that any of them would be useful in helping to avert threatened coma, the special indication, as Harley has shown, being disappearance of sugar from the urine. The theory is simply that they bring about increased oxidation of the sugar or secondary products circulating in the blood. Hydrogen dioxide water can be given in much larger doses than I have mentioned,—almost *ad libitum*, in fact,—and oxygen can be conveniently given by inhalation. Ozonic ether can be injected hypodermically.

I have not spoken of diet, taking that for granted. It precedes medication. I will only say: Don't try to cut off bread and potatoes altogether; the patient won't submit. Gluten bread is not reliable and is not palatable. Give small quantities of ordinary bread,—toasted, if you like,—say six small slices or

three rolls a day. An occasional roasted mealy potato will be a great treat and won't harm the patient. Beyond this; try to make up by fats for the exclusion of starches. It is now possible to give our patients a certain form of sugar. Last year I had before the class a young thin man, then in the hospital, to whom I was giving levulose, or fruit-sugar. Careful chemical analyses of his urine by Dr. Henry Leffmann showed that the urinary sugar did not increase, but actually diminished, while the patient was taking this form of sugar. As you know, levulose, so called because it rotates polarized light to the left, has the same empirical chemical formula as glucose, or, as the latter is called from its action on polarized light, dextrose. The rational formula of the two sugars, however, has been recently shown to be different, and the place of levulose is among the ketone group, while dextrose is placed among the aldehydes. This may account for their different relations to the metabolism of diabetics. Twenty years ago Kuelz, of Marburg, showed that diabetic patients could assimilate levulose and inosite, but only recently has the former been produced as a commercial article. I have used it now for nearly two years, and in some twelve cases of diabetes, and in all it has been assimilated. It is sweet,—not quite so sweet as cane-sugar, but sweet enough to enable our patients to gratify their palates,—and it is useful as a carbohydrate aliment. It turns coffee somewhat black. I give it in quantities of about an ounce a day to lean patients; to stout patients simply as a sweetening.

I am making some observations now with lactose,—milk-sugar. Several patients have taken as much as 4 ounces of milk-sugar in a day without increasing the excretion of sugar in their urine. Others can take but a fraction of this quantity. Philip is one of the patients on whom this observation has been made. He can dispose of about two ounces of lactose daily; four ounces cause an increase of about two ounces in his daily dextrose excretion. As a practical deduction from these clinical experiments, I permit my diabetic patients to drink milk freely.

And now, to conclude, I have three words of advice.

1. Keep your patients warm and protected; cold is their greatest enemy.
2. Examine the urine for organic acids and keep the blood-alkaline.
3. In the matter of diet, be strict enough to diminish polyuria and glycosuria, and, if possible, to secure their disappearance, *provided* you

can at the same time keep the patient comfortable; but under any circumstances *make the patient comfortable*.

### VENESECTION.

BY CHARLES GRANVILLE STONE, M.D.,  
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Member of the Association and Medical Society of the  
District of Columbia.

**MR. PRESIDENT AND FELLOW-MEMBERS:**—The subject to which I wish to invite your attention to-night is the use of the lancet in the treatment of modern diseases, as viewed from the stand-point of a conservative practitioner of the science of medicine of to-day. I shall not undertake to interest you, as I might, by a long and varied history of blood-letting, since you may all find that in the books, but to call your thoughtful attention to the need of its use to-day as being greater, if anything, than at any time in the history of the race. We are now confronted by such an army of remedies looking towards the object of meeting and destroying the effects of high temperature in the course of disease, that we may well call a halt and ask ourselves, "Where will all this end?" In the death of our patients in many instances, or the permanent injury of some one of the many organs of their bodies, and in a shortening of the very life we have sought to prolong. I refer here to the many and indiscriminate uses of those medicines known now as antipyretics (formerly as antiphlogistics). Now, I shall make the assertion and defy contradiction, that within the last four years there have been more deaths due to the abuse of the antipyretics than ever occurred in any four years of the abuse of blood-letting. I make this bold assertion to call your minds to the contemplation of the truth as it is seen to-day in the practice of each and every one of you. Now, right here let me say that I believe in the use of many of the so-called antipyretics which are before the profession, but I also see one much safer which has fallen into "innocuous desuetude," without sense or reason, simply because it had been abused by the ignorant and those who, like many at the present day, follow the popular trend of professional thought and practice. I shall endeavor to make it plain to you why the great need of to-day is the return of the use of the lancet. I might safely rest this upon the advice of those great lights of our profession, among whom we have Sir Benjamin W. Richardson, Sir George Humphrey, Mr. Pollock, and a great many other eminent men of the present day, but I

prefer, if I can, to convince you that there is a category of cases which has been the guide of the most honored men of the past and the most brilliant men of to-day, and which should demand of you the use of this most convenient, prompt, and potent antipyretic.

In the discussion of a paper read before the Royal Medical and Chirurgical Society of London, January 27, 1891, by P. H. Pye Smith, we have such men as Stephen Mackenzie, Sir George Humphrey, Dr. Broadbent, Mr. Hulke, Mr. Pollock, and Sir Benjamin Ward Richardson coming out in support of the lancet in the strongest terms. I shall here quote their words upon this subject as uttered upon the occasion. Pye Smith had selected in his paper fifty cases, including the following, under three categories: bronchitis, acute and chronic broncho-pneumonia, lobar pneumonia, miliary tuberculosis, valvular stenosis of the heart, pericarditis, Bright's disease, aneurism, apoplexy, and epilepsy. He took the ground that this remedy is to be used to meet certain indications, not one just adapted for any one such disease. First, cyanosis with distention of the right side of the heart, whether from pulmonary or other obstruction to the circulation; second, the intense pain of aortic aneurism; third, uræmic and prolonged epileptic convulsions. Dr. Stephen Mackenzie opened the discussion by saying, "I advocate its use. I have always been in the habit of bleeding in certain prescribed conditions, especially in the three categories of cases in which the author (Mr. Pye Smith) thought that bleeding was indicated. The first class—that of venous congestions—was the one which best exemplified its advantage. Where the patient was in pressing danger, with distention of the right side of the heart, its value was indisputable. Heart-disease might not be permanently benefited, but in capillary bronchitis it not only afforded all but immediate relief of the great distress, but was decidedly curative in its effects. In pneumonia it gave not so much relief to the disease proper as to the struggling right heart. The difficulty is a temporary one, and if this be tidied over the prospect of recovery was materially enhanced, if not accomplished." Here Dr. Mackenzie gave the following interesting and instructive illustration of the efficacy of bloodletting in pneumonia. He had been called in consultation with Dr. Kibbler to see a case of acute pneumonia in a woman previously strong and healthy. Found her cyanotic, pulse 120, temperature 104° F., with respiration 52. She was stupid, drowsy, and apathetic. He said at once, "The only thing

to be done is to bleed." In this opinion her family physician, Dr. Kibbler, agreed. They drew twenty-six ounces of blood. The temperature at this time was  $104^{\circ}$  F. The next morning it had fallen to  $98.2^{\circ}$  F. In the evening the temperature ran up to  $104^{\circ}$  F. again, pulse 120, and respiration 55. Dr. Kibbler applied a few leeches, which failed to afford any relief. The following evening the patient's condition seemed so desperate (she being unconscious, pulse 130, temperature  $105^{\circ}$  F., and respiration 80) that Dr. Kibbler now drew twelve ounces of blood, with immediate relief to the most urgent symptoms and the temperature falling the next day not to rise again. Dr. Kibbler and his father, who had watched the case narrowly, were strongly of the opinion that the bleeding had been the means of saving her life. He also recalls a case, seen with his brother Lewis Mackenzie, of hæmoptysis. The blood had run down into the trachea and bronchi and the patient appeared in imminent danger. They bled, and he was immediately relieved and ultimately recovered. He says he believes that the iodide of potassium will, when given in large doses (30 grains), afford relief to the pain of aneurism, but it is not so sure nor so prompt as venesection, and he refers to a case, the specimen of which is now in the British Medical Museum, which had been cured by bleeding. Sir George Humphrey related at this meeting several cases wherein bleeding freely had saved the lives of patients beyond a doubt. He says he knew two brothers who had pleurisy. One was bled by him; the other was treated by another physician and was not bled. His case recovered promptly, while the other died. It was his opinion at the time that if the brother who was not bled had been bled, he would have recovered, too. Sir George's experience in bleeding in uræmia had been limited, but it had been attended with good results. He related a case where he had been called in consultation. The patient had bronchitis with albuminuria, and he advised bleeding, but the medical man stood aghast and said he did not bleed nor even know how. Sir George thereupon bled the patient himself. The doctor told him afterwards that he truly believed it saved the man's life. Dr. Broadbent said he had formed a strong prejudice against the practice of bleeding while a student in Paris, because the doctors there bled in cases of typhoid and rheumatic fevers; but that, after leaving the hospitals and becoming an independent practitioner, little by little the advantages of venesection became apparent to him, and for a

long time not a year had passed without him having occasion to recommend it, and he often had to do it himself. He had seen patients' lives saved by bleeding in mitral stenosis and regurgitation, when, the balance having been restored, the patient had gone on for many years. He says, further, "The time to bleed in bronchitis is when you have a strong-beating heart and a feeble pulse, which indicates pulmonary obstruction. Dr. Hulke related a case of a man who had been brought into the hospital with injury of the head, and some time afterwards was taken with convulsions without any premonitions. He was called to his bedside, and found the patient with labored breathing, veins of the head and neck large and distended, and with a purple, congested face. He immediately bled him freely, with instant relief to all the symptoms. The man fell off into a refreshing sleep and was discharged the following day. Mr. Pollock insisted on the importance of bleeding in surgical cases, such as injuries of the head, fractured ribs, perforated lungs with more or less escape of air into the pleural cavity and great distress of breathing, and in hæmoptysis he knew nothing that conduced so much to the comfort and relief of the patient as bleeding. He said he was frequently and painfully mortified at the ignorance shown by the students who came up before him for examination for the army and foreign service; that they neither knew when nor how to bleed. Now, the only man in that great body of great men who could not and would not advocate the use of the lancet was Mr. Jonathan Hutchinson, who said that, as a surgeon, he could not use it, because he was afraid that some one might accuse him of having bled his patient to death. This very clearly shows that Mr. Hutchinson has not been practising that which he thought best, but what was safest for his own reputation. He was willing for them to die without the proper effort on his part to save, rather than run any risk of having his treatment questioned by the profession of popular gentlemen who condemned the same. That forcibly illustrates the condition that exists to-day in our profession in this country, and especially in this our capital city. Professor Samuel D. Gross, long before his death, advocated in his own city and in many others the return of the lancet, and acknowledged that he had, in his best opinion, lost some very eminent men through neglect of the use of that important little instrument. Who here tonight will pause even for a moment to question the truthfulness of this great surgeon's convictions? All of you are more or less indebted to him for what you know about the surgical



practice of medicine, and why should you doubt or question his correctness in this particular? Simply because it is not popular! But I tell you it will be popular long before many of you become too old to practise your art. I wish now to recall the opinion of one whom you all know of, and I doubt not many know personally, as being one of the foremost authorities in this country on the science and practice of medicine, and that reputation has been acquired largely because he is one of the best pathologists and because his opinions are founded upon pathological facts and not mere guesswork. I refer to Dr. William Osler, professor of medicine in the Johns Hopkins University, of Baltimore. He says, when a patient is brought into the hospital in a state of urgent dyspnoea in emphysema, with lividity and great engorgement of the veins, especially if the patient is young and vigorous, he should be bled at once. "I have," he says, "on more than one occasion saved the life of the patient by bleeding freely." In mitral and tricuspid stenosis with great engorgement of the venous system and resultant anasarca, he says bleeding will afford the most prompt relief. He also says that nothing will relieve the pain in aneurism sometimes so promptly as venesection. He likewise employs it in cerebral hemorrhage, effusion of serum, and venous congestion with great arterial tension. I might consume all my time here to-night with quotations from the most brilliant authorities of this country and Europe in support of my previous assertion that there never has been a time in the history of man when this most potent agent in the practice of medicine has been more needed than in this present day; and why? Simply because, as we become more civilized and highly educated, we are becoming more and more the subjects of diseases that are best met and treated by this remedy. We see by statistics that such diseases as congestion of the brain with effusion or hemorrhage have gradually increased, likewise pulmonic obstructions, also liver- and kidney-diseases, all of which are especially amenable to the antiphlogistic or bloodletting treatment of our forefathers. Our mode of life certainly is largely responsible for these conditions, more so than any change in the type of disease or climatic environments. Now, let us see just what we might reasonably expect from this bloodletting treatment, viewed in the light of present biological, physiological, and pathological science. The bacteriologist has certainly proved that our great phlebotomists—Sir Astley Cooper, John Hunter, and John Bell, of England, and

the immortal Rush and Physick, of this country—were right when they claimed that there was a "humor in the blood" which could be bled out to a great extent, at least sufficiently to enable the patient to survive the immediate effects and give other means a chance to perfect a cure. While they did not know what these ferments were, they recognized the fact that by bleeding the patient you drew off a great portion of this poison, whatever it might be, and by the water which the patient required after venesection you diluted the poison which remained in the blood and thus destroyed its immediate virulency upon the human system. Now, we know that these so-called humors or ferments were nothing else than the various bacilli or their toxic ptomaines of to-day. Therefore, where would you find, of all the remedies in the Pharmacopœia, so potent a remedy in the congestive chill of malignant intermittent fever as bloodletting? There is none. You not only relieve at once the overloaded right heart, but you relieve the congested and almost paralyzed brain and spinal cord, which, if not relieved at once in this prompt and easy way, may cost you the life of your patient. Certainly, in these cases you would not think of waiting for the slow action of a purgative or any of the mild revulsives that might be at hand. As I said before, where will you find another means so prompt to relieve your patients of immediate danger? Another condition. Suppose you are called suddenly to see a large plethoric individual who has just fallen to the floor with apoplexy. You see him, like the late Congressman who died here the other day, with gasping breath, eyes turned back in his head, face cyanotic, and with a perfect and total paralysis of the entire body. Now, in this case, what, in the name of a great and good God, can you do with drugs? You can give but one answer to this question truthfully, and that is, Nothing. What might you do with the lancet or your penknife, if you had nothing else better adapted? Bleed him, relieve the overtaxed heart and the engorgement at the base of the brain, and restore him to consciousness, if not to health again, as I have in several instances. I shall relate one instance that just now occurs to me. Several years ago one of our prominent citizens was in the collector's office of the district waiting for the clerk to give him his tax bill, which he wished to pay. He had been quite excited and worried about the amount of the assessment, and had not been feeling well that morning. He had said before going to town that he had a "swimming" in the head. Just as the clerk handed

him the bill he commenced to stagger and speak incoherently, and would have fallen to the floor had he not been caught just in time by some one standing near. They immediately called in a couple of physicians and had him conveyed to the house of one of them, and they applied the popular treatment, of course. This failing to restore him to consciousness, the wife, who had been hastily sent for, telephoned me, and asked me to come down and meet them, that she was bringing him out home in a carriage. I met them half a mile from the city, and turning my horse and buggy over to his son, who had also now joined them, I got in the carriage with my patient. They had him propped up in the carriage with pillows, and he presented the appearance of a dead man, only that his face and forehead were lined with great blue veins that stood out like whip-cords. His breathing was slow and stertorous, while his heart was beating like a sledge-hammer. I hurried the driver, and in less than twenty minutes we arrived at his house. I had him taken to his room, and, after having removed his clothes, tied his left arm and drew about thirty-two ounces of blood. It ran very slowly, and was black and thick at first, but before I had finished it became bright red and natural looking. He became perfectly conscious, and commenced to relate the particulars of the attack and when it had happened, before I had tied up his arm. Now, in this case, I feel assured that bleeding was not only the thing, but the best and only thing to be done. He entirely recovered from this attack, and was free of the slightest signs of paralysis and remained so for a long time after, but had another attack from having violated my injunction that he should give up the habit he had of going over and around his yard and picking up stones or anything that might have been neglectfully thrown there. In the second attack he was not only in strong convulsions when I reached him, but he showed perfect hemiplegia. I again bled and restored him to consciousness, but he could not articulate plainly, nor did he ever entirely regain the use of his limbs on the right side, although he could walk with the assistance of his valet. This condition of things lasted for nearly one year, when he was taken with a third attack, when I declined to bleed him (though the family wished me to) because his condition was not likely to improve over what it had been for the last year. The chances were that the bleeding could not relieve the case, so, taking the advice given by Dr. Hutchinson, I saved myself from being accused of having bled him to death.

I cannot refrain from referring to a case of acute lobar pneumonia which came under my care some twenty years ago, or the second year of my practice in this District. It was late at night and just after a dreadful storm in April; when quite near the house I was confronted with a greatly swollen stream; but as I was contemplating returning and taking the chances that the patient would get along all right until morning, I looked up to the house, which was located some twenty-five yards up the hill on the other side of the stream, and could very distinctly see the father and mother struggling with the young man to keep him from getting out of the window. This settled the matter of fording the stream. I arrived just in time to help them carry him back from the stairway, where he had tried to descend in his effort to escape in his wild delirium. I had great difficulty in keeping him quiet enough to make a physical examination. I found a double pneumonia, both lungs almost entirely solidified. This condition was accompanied by a strong-beating heart, feeble pulse, and a cyanotic face; respiration some 60. I did not attempt to take his temperature, but hastily tied up his left arm and took some thirty ounces of blood. This was immediately followed by perfect quietness of the patient and relief to all of the most urgent symptoms. I then ordered for him some powders containing 8 grains of Dover's and 2 grains of calomel, to be given every three or four hours, as needed to quiet him, knowing that the bowels would move freely from the effects of the calomel, and that he would not likely need another bleeding in the morning. I also had a blister, five by six inches, applied over each lung and then covered by a meal poultice, to be changed every hour until the blisters drew. I remained a couple of hours and then left him sleeping as sweetly as a new-born babe, and returned the next morning to find him perfectly rational, breathing freely, respiration only about 20, cough not troublesome, but raising the prune-juice expectoration with great ease and in great quantities. The temperature was now 102.5° F., and his skin, which had been hot and dry the night before, was moist and felt all but natural. This case made an uneventful recovery, being out at work in less than three weeks. I am perfectly satisfied that if I had not bled him he would have died before I could have got anything else to act. If any one in this Society should doubt the truth of this statement, I will be glad to take him out and introduce him to the family and have the family vouch for all that I have said.

Now, let us look at the subject of bleeding "spring and fall," or, in other words, bleeding as a prophylactic. As I said in the beginning of this paper, there are certain indications as regards youth, strength, and the plethoric condition of the individual which, in the present advanced state of our knowledge of etiology and pathology, must perforce recommend this treatment to us in a number of cases as the best we have at hand. Now, we will take for example one of our active businessmen, who weighs, say from one hundred and eighty to two hundred and twenty pounds, full-blooded, plethoric, with florid complexion, of a bilious habit and lymphatic temperament. He frequently complains of headache and swimming in the head. He is a good liver and takes his grog. This patient, if you will take thirty-two ounces of blood from his arm "spring and fall," will be relieved of those symptoms, and if he be of apoplectic parents you will prolong his life. If he is, as many of these men are, the subject of catarrh of the bowels, he will get well of that ninety-nine times out of a hundred. Now, why would bleeding cure the headache, swimming in the head, and prevent apoplexy? Because the blood is in excess of that required in the economy, and because bleeding will lessen the arterial and venous tension. Now, how will it do this? Simply by a common law of physics. We know that, if we take a thin rubber tube and force fluid through it, the tension is increased in proportion to the density of said fluid,—that molasses would rupture the tube under the same force that would drive water with equal rapidity free of all danger. If the blood of a healthy individual is forced through the arteries under fifty-two pounds' pressure and at a velocity of twenty inches per second without injury to the vessels, molasses in its stead would rupture every artery of the body under the same force and rapidity of stroke. Therefore, when we bleed we thin the blood, because the system will replace in a very short time the loss in quantity by the absorption of water either from that supplied to the patient from without or it will take it up from the serous sacs or cavities from within. I admit that bleeding thins the blood of its solid elements, and, while doing this, removes a large per cent. of that which acts upon the system as the cause of disease. If you inject a large dose of some poison into the blood and immediately bleed freely, and give the patient at the same time large quantities of water to drink, you will so dilute the poison after what you have abstracted through bleeding, that the dose, which would otherwise have killed, will pass harm-

lessly out of the system and your patient will not be any the worse for it. We know that modern science has clearly demonstrated the fact that if we reduce the pressure in the capillaries, we will relieve the heart force or the necessity of it, reducing its work and therefore lessening the danger of heart-failure. This seems so clearly demonstrated in the practice of bloodletting in the prescribed indications in disease, that whether or not we can prove the theory true matters little. I have to-day a lady who lives in the District, and whom I have bled "spring and fall" for the last eight or ten years, and I am certain she would have died long since if it had not been done. There has been a case in my practice within the last twenty years whose blood-making organs were so active that it became a disease or abnormal condition, and who, notwithstanding the most rigid course of diet and exercise, had to be bled twice a year to save his life, on account of the great danger from pulmonic congestion. The father of Mr. Gude, your energetic florist on F Street, was one of these patients to the day of his death, which was caused, as his son will tell you, because he neglected to come when he knew from his feelings that he ought to be bled. This man had been given up to die by two of the most honored men whose names ever adorned the roster of this Society, and yet, as I said before, under the spring and fall bleeding he lived for some eight or nine years. I thank you, gentlemen, for the patient attention which you have accorded me this evening, and sincerely hope that I have convinced some of you of the great therapeutic value of this handy remedy.

#### THE PHYSIOLOGICAL ACTIONS OF ALCOHOL.

ABSTRACT OF A PAPER PRESENTED TO THE SECTION ON THERAPEUTICS OF THE FIRST PAN-AMERICAN MEDICAL CONGRESS, HELD AT WASHINGTON, D. C., SEPTEMBER 5, 6, 7, AND 8, 1893.

BY DAVID CERNA, M.D., PH.D.,

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(Continued from page 232.)

**ON THE BLOOD-PRESSURE.**—Following an injection of a small quantity of alcohol in the normal animal, as is observed in the preceding experiments, there occurs within a short time a sufficiently marked rise of the column of mercury in the manometer. After a while the pressure returns to its normal

height, and again rises if a second dose is given, to be once more decreased below the normal if the amount of the drug ingested is carried beyond a certain limit. Thus, in Experiment 10, after the administration of 10 cubic centimetres of a twenty-five-per-cent. solution, a rise of 18 millimetres occurred one minute and forty-five seconds afterwards, and in two and a half minutes more the pressure fell to 158 millimetres (the normal being 154). A second injection of 15 cubic centimetres was followed by an increase of 16 millimetres above the normal point within half a minute. The pressure stayed up for about two minutes. A third injection of 20 cubic centimetres caused a very slight rise, this lasting for about eight minutes, and then there was a gradual fall below the normal. The same results are noticed in Experiments 11 and 12.

In Experiment 13 a continuous injection was employed of a solution of the strength of twenty per cent. Three minutes after the injection had been started the pressure rose to 138 millimetres (the normal being 132 millimetres), and to 142 millimetres three minutes later. By the time that the animal had received 50 cubic centimetres of the alcoholic solution (eight minutes after the beginning of the injection), the pressure marked 138 millimetres, still above the normal; but it soon afterwards began to diminish, and was seen at 128 millimetres by the time that 155 cubic centimetres of the solution had been ingested into the animal. The pressure, with slight variations and accompanied by disturbances of reflexes and respiration, then fell gradually till the occurrence of death, this latter issue taking place through failure of the respiration.

Similar results were obtained in Experiment 14. In this animal the normal pressure was 138 millimetres. There was a slight rise a few minutes after the commencement of the injection. By the time the dog had received about 260 cubic centimetres the column of mercury marked 118 millimetres. The crural nerve, which had been previously prepared, was then stimulated with an electrical current of medium strength, and a few seconds afterwards the pressure rose to 122 millimetres, showing evidently that the vaso-motor system was intact. When 325 cubic centimetres of the alcoholic solution had been ingested the pressure marked only 98 millimetres. At this time the sciatic nerve, which had also been previously prepared, was irritated with a strong faradic current, and the column of mercury in the manometer was seen to rise to 106 millimetres. Ultimately the animal died from respiratory

failure, having lived forty-six minutes under the influence of alcohol.

Experiment 15 shows the same effects on arterial pressure. After 6 cubic centimetres of pure alcohol had been administered, the column of mercury was reduced to 120 millimetres (from 150 millimetres, to which it had been elevated,—that is, 12 millimetres above the normal). At this time artificial asphyxia was produced by tying the trachea tightly. Here, again, under such circumstances, there was a decided response by the vaso-motor system, as shown in the rise of pressure to 142 millimetres.

I found, likewise, that in curarized animals—in which any influence exercised by the respiration on blood-pressure is thus avoided—alcohol, in small amounts, produced the same results, as may be observed in Experiment 17.

Large doses of the drug cause from the onset a decided lowering of the arterial pressure, this decreasing, if the amount has been sufficiently poisonous, till the occurrence of death. If the dose be moderately large, its ingestion into the torrent of the circulation will be followed by a decided fall, the result, no doubt, of an overwhelming action upon the heart. In these instances the pressure is apt to recover, but does not go beyond the normal height.

Let me explain how these changes of blood-pressure are brought about. It has been shown by the most recent physiological researches that when, in an animal under the influence of a drug, the two curves (as registered on the revolving kymograph), one representing the rate of the pulse and the other the height of the blood-pressure, run parallel, such an effect is the result of an action upon the heart; but if opposite to each other, the phenomenon is dependent upon a vaso-motor influence. In other words, if the arterioles are made to contract through a vaso-motor stimulation or spasm, the blood-pressure rises; but, at the same time, the increased pressure stimulates the cardio-inhibitory centres in the medulla oblongata. As a consequence of this latter phenomenon the rate of the pulse falls, and thus the curves of the pressure and the pulse run in opposite directions. When this takes place it is assumed that the change in the arterial pressure is due to a vaso-motor influence exercised on the arterioles.

Now, then, a plot taken from a kymographian record of an animal under the influence of alcohol in moderate amounts would undoubtedly show a parallel course of the curves, this alone giving evidence of a cardiac action. There is, however, further and perhaps more conclusive

evidence of this action of the drug under consideration.

Faradization of a sensitive nerve and asphyxia are able to elevate the arterial pressure depressed by toxic quantities of alcohol, this result proving that the vaso-motor system is intact. But the stimulation by small doses of alcohol might as well be ascribed to an influence exercised on the vaso-motor system or to paralysis of the cardio-inhibitory apparatus as to a direct cardiac action. Yet that such is not the case is shown by the results obtained in the third and fourth series of the experiments performed on dogs. In these experiments the cardio-inhibitory and the vaso-motor influences were eliminated by previous section of both pneumogastric nerves in the first place, and by previous division of both vagi and the spinal cord in the second instance.\*

The results obtained in Experiments 18 and 19 and in 20 and 21 are obvious. An examination of the corresponding tables shows that alcohol, under such circumstances, is still able, when given in small quantities, to stimulate both the arterial pressure and the pulse-rate. Large doses of the drug in all cases produce from the onset depression effects.

It must be concluded, then, from the foregoing experimental evidence, that alcohol in small amounts causes a rise of the arterial pressure by a direct action upon the heart, and that in large or toxic quantities it lowers the blood-pressure similarly through a cardiac influence.

*On the Blood.*—If alcohol is mixed with blood outside of the body, coagulation is enhanced. I have often observed this in my experiments, in those made solely to study this phenomenon as well as in those already sufficiently described. I found that coagulation could be largely avoided by diluting the agent before its ingestion into the torrent of the circulation. To what these effects were due was not determined. Microscopical examination of the blood of animals killed with alcohol showed a marked alteration of the corpuscles, many of these appearing shrivelled and exhibiting yellowish matter in their interior. This latter observation has been previously made by Jaillet and Hayem,† and long before by Schulz.‡ Schmiedeberg§ has noticed that alcohol mixed with blood diminishes the ability of this fluid to yield oxygen in the presence of a reducing

agent. There is no doubt that alcohol in this action causes the separation of the hæmoglobin from the corpuscles.

#### ON THE RESPIRATION.

Small doses of alcohol do not markedly affect the rate of the respiratory movements. In large or toxic amounts the drug generally decreases the respiratory rate, although this is sometimes primarily or secondarily increased, accompanied by a diminution of the depth of the movements. As a rule, the amount of air going through the lungs—whether the rate is increased (in which case the respirations are usually shallow), or whether the depth of the movements is diminished—is decreased. The results of the experiments recorded herewith in regard to the respiratory rate are sufficiently clear. As the same effects are noticed in animals in which the vagi have been previously divided, it is evident that the drug diminishes the respiratory movements by a direct action on the centres in the medulla.

I have found that alcohol not only produces, in sufficient amounts, a decreased rate, but also a diminution in the depth of the respiratory movements, this giving rise to a lower quantity of air passing through the lungs than in normal conditions.

I have in this respect conducted a special series of experiments, the results of which are recorded below.

A simple apparatus was constructed,|| consisting of two bottles filled with mercury, in which this substance served the purpose of a valve against tubes inserted through a tight rubber stopper. Both bottles, by means of rubber tubing and a Y-shaped glass tube, were connected with the trachea of the animal; and, in turn, one of the bottles was left in contact with the atmosphere, the other with large rubber bags, these again being made to communicate with a common air-meter. Thus the air inspired by the animal was wholly transferred to the rubber bags, and the amount of air passing through the lungs in a certain period of time more or less accurately ascertained by the meter. I first measured the air for two or three periods of five minutes' duration each before injecting the drug, and then proceeded to repeat the operation while the animal was under the influence of alcohol.

The same results were obtained in animals in which the vagi had been previously severed. In

\* Post-mortem examination of these latter animals showed that the cord had been completely severed.

† Virchow and Hirsch, *Jahrbucher*, 1884.

‡ *Hufeland's Journ.*, April, 1841.

§ *Virchow's Archiv*, Bd. ii. S. 171.

|| The apparatus was suggested to me by Professor H. C. Wood, while working with him in the laboratories of the University of Pennsylvania.

this connection I have made the observation that, after division of the pneumogastrics, although the respiratory movements, as is well known, are diminished in rate, there is quite often an increase in their depth, and, as a consequence, a larger amount of air than in normal conditions is taken in by the animal. On the other hand, I have frequently noticed that, after section of the vagi, instead of a decrease, there often occurs an enormous increase in respiratory rate; but, at the same time, the shallow character of the movements admits of a proportionate diminished amount of air entering the lungs.

Alcohol, after previous division of the vagi, is still able to produce a diminution in the depth of the respirations, this diminished depth causing a lessening of the quantity of air inspired. The following records show this:

*Experiment 22.—Dog; weight, 7.71 kilos.*

Period.	Respiration per min.	Meter air-movement.	Remarks.
First.....	48	7.9	Dog quiet.
Second.....	46	7.6	Dog quiet.
Third.....	46	7.6	Dog quiet; injected 2 c.c. of pure alcohol.
Fourth.....	36	5.4	
Fifth.....	30	4.9	Dog quiet; injected 1 c.c. of pure alcohol.
Sixth.....	24	4.1	Eye reflexes very weak.
Seventh.....	24	4.1	Respirations shallow.
Eighth.....	24	4.1	Injected 2 c.c. of pure alcohol.
Ninth.....	22	3.8	Eye reflexes gone; animal alcoholized.
Tenth.....	18	3.1	Eventually killed with ether.

*Experiment 23.—Dog; weight, 12.6 kilos.*

Period.	Respiration per min.	Meter air-movement.	Remarks.
First.....	72	19.6	
Second.....	72	19.4	
Third.....	78	20.0	Animal struggles; injected 2 c.c. of pure alcohol.
Fourth.....	60	15.1	
Fifth.....	54	13.0	Injected 3 c.c. of pure alcohol.
Sixth.....	36	9.4	Eye reflexes gone; injected 5 c.c. of pure alcohol.
Seventh.....	30	7.3	Respirations irregular and shallow.
Eighth.....	12	5.7	Muscular rigidity.
Ninth.....	8	4.6	
Tenth.....	6	3.8	Respirations very shallow; killed with ether.

*Experiment 27.—Dog; weight, 10.8 kilos.*

Period.	Respiration per min.	Meter air-movement.	Remarks.
First.....	26	9.3	Alcohol (25 per cent.) used.
Second.....	24	9.5	
Third.....	24	10.0	Cut both vagi; tube in trachea.
Fourth.....	12	11.2	Period taken 10 minutes after cutting of vagi.
Fifth.....	16	12.1	
Sixth.....	12	15.8	Respirations deep.
Seventh.....	12	16.1	Started injection.
Eighth.....	10	12.0	
Ninth.....	8	10.2	Eye reflexes weak; has received 125 c.c.
Tenth.....	8	7.0	
Eleventh...	6	5.1	Has had 200 c.c.
Twelfth.....	6	3.7	Has had 240 c.c.; stopped alcohol.
Thirteenth..	6	2.1	Respirations quite shallow.
Fourteenth	...	...	Animal died.

As in the case of the respiratory rate, alcohol, therefore, causes a depressant effect on the depth of the respiration and the amount of air passing through the lungs, such a result being due also to a direct action of the drug on the respiratory centres in the medulla oblongata.

In concluding this portion of the subject, in which, by the methods sufficiently described, I have been able to study at the same time the behavior of alcohol on the circulation and the respiration, I may state that I did not attempt to ascertain the minimum fatal dose of the drug in dogs. In fact, the action of alcohol upon the lower animals, even of the same species, varies as regards its toxicity, and any general conclusions drawn from one series of experiments may be diametrically opposed to those arrived at in a second series. However, taking into consideration the most striking of my experiments, I obtained the following records: In Experiment 12, 17 cubic centimetres of pure alcohol proved fatal to a dog weighing 9.9 kilos, or 1.7 cubic centimetres per kilo of the body-weight may be said to have been the lethal dose. In Experiment 13, a dog weighing 8.3 kilos died after an injection of 320 cubic centimetres of a twenty-per-cent. solution of alcohol, giving as an average for the fatal amount 38.5 cubic centimetres of the solution per kilo of the body-weight. In Experiment 14, in which a twenty-five-per-cent. solution of alcohol was employed, 325 cubic centimetres of this was sufficient to destroy a dog weighing 8.9 kilos, the average being quite similar to that noticed in the

second example here referred to,—that is, 36.5 cubic centimetres per kilo of the body-weight. Eagleton observed that alcohol in the strength of twenty-five per cent. produced death in the proportion of from 5 to 40 cubic centimetres per kilo of the animal's weight, results apparently somewhat similar to mine.

#### ON BODILY METABOLISM.

*On the Elimination of Carbon Dioxide and the Absorption of Oxygen.*—The absorption of oxygen and the elimination of carbon dioxide have been the subject of very elaborate researches, and although there appears to be some difference of opinion in the two questions at issue, most investigators seem to have arrived at almost definite conclusions. Let me, however, bring to the notice of the reader the most important points in the controversy, which will serve as the basis for this study and for further research. The subject certainly needs to be further investigated.

In regard to the elimination of carbon dioxide, Boecker,\* Perrin,† Davis,‡ Hammond,§ Boeck and Bauer,|| and Rumpf¶ affirm that, under the influence of alcohol, there is a distinct decrease in the amount of carbon dioxide exhaled; and whiskey, brandy, and gin diminished the production of the gas, according to the researches of Smith,\*\* quoted by Wood; †† diminished the production of the gas, it is true, but alcohol in small quantities increased the elimination of the carbon dioxide. This same increase has been observed by Wolfers‡‡ in the case of rabbits.

Closely allied to this question of elimination of carbonic acid is that of the absorption of oxygen, similarly of the greatest interest. This has also been the subject of several investigations. Thus, Henrique,§§ from experiments performed upon himself, found that there was an increase in the amount of oxygen consumed. Identical results were obtained by Wolfers||| in the rabbit, and in rabbits and dogs by Bodländer.¶¶ Zuntz,\*\* who experi-

mented upon man, came to opposite conclusions, asserting that the consumption of the gas is decreased. Forster††† made similar observations. "No important effect," on the other hand, was noted by Geppert‡‡‡ in a similar series of experiments. The matter has been discussed at length by Warren,§§§ and Wood,||||| commenting upon the contradictory nature of the evidence presented up to 1891, states that to his mind such evidence "is probably in part due to the experimental difficulties of the subject, but at the same time strongly indicates that moderate doses of alcoholic spirits have no constant very decided action upon the formation and elimination of carbonic acid. It is readily conceivable that by checking or aiding digestion, by influencing circulation, or in some other way, they may exert a varying indirect action, which is superior to the slight direct influence in lessening carbonic acid production, which the weight of evidence indicates that they possess."

*On Nitrogenous Excretion.*—Upon the elimination of nitrogenous material alcohol has, although denied by some observers, a very decided action. Boecker¶¶¶ has apparently proved experimentally that the drug decreases the elimination of urea. This is denied by Parkes and Wollowicz;\*\*\*\* and yet it is seen in the experiments of these latter investigators that, with the exception of one day in which the man experimented upon had a chill followed by a feverish reaction, the daily excretion of urea was 34.35 grammes during the alcohol period; during the time when brandy was taken the elimination of urea was 34.8 grammes, while during the water period it was 35.02 grammes. There was, therefore, a reduction in the excretion of urea by about 10 grains (.65 gramme) daily. Hammond, quoted by Wood,†††† experimented upon himself, dividing his experiments into three series: First, when just sufficient food was taken to maintain the weight of the body; secondly, when more food than enough was taken for that purpose; and, thirdly, when not enough food was ingested. The results noticed were in all instances similar,—that is, they showed that alcohol lessened the amount of chlorides, phosphates, and urea. These results have been confirmed by the careful experiments of Rieso,†††† made on two persons placed under the strictest conditions. This

\* Quoted by Bernard in *Journ. de Pharm.*, t. xv., 3d series, 1849.

† *Archiv. Génér.*, t. lv., 6th series.

‡ *Transactions of the American Medical Association*, 1855.

§ "Physiological Memoirs." Philadelphia, 1863.

|| *Zeitschr. f. Biolog.*, Bd. x., 1874.

¶ *Pflüger's Archiv*, Bd. xxxiii., 1884.

\*\* *British Medical Journal*, 1859.

†† *Loc. cit.*

‡‡ *Pflüger's Archiv*, Bd. xxxii., 1883.

§§ *Bull. de l'Académ. Roy. de Belg.*, t. ii., 1883.

||| *Loc. cit.*

¶¶ *Zeit. f. Klin. Med.*, Bd. xl., 1886.

\*\* *Fortschr. der Med.*, Bd. l., 1887.

††† *Annual of the Univers. Med. Sciences*, 1888.

‡‡† *Archiv f. Exp. Pathol. und Pharm.*, Bd. xxii.

§§§ *Boston Med. and Surg. Journ.*, July, 1887.

|||| *Loc. cit.*

¶¶¶ *Loc. cit.*

\*\*\*\* *Loc. cit.*

†††† *Loc. cit.*

†††† *Hoffman und Schuelbe's Jahresh.*, No. 357, 1881.

author found that, under the influence of alcohol, there was a marked decrease in the urea elimination, and to a less degree also in the excretion of chlorides, phosphates, sulphates, and uric acid. There was at the same time a gain of the bodily weight.

This action of alcohol on metabolic changes is further corroborated by the excellent researches of Mohilansky,\* house physician to the clinic of Manassein. The investigator undertook a series of experiments on fifteen healthy individuals, most of them medical students aged from eighteen to twenty-eight years, his object being to study the action of alcohol not only on the nitrogenous metabolism, but also on the assimilation of proteids and fats. Some of the subjects experimented upon were total abstainers, some were occasional drinkers, while others were habitual alcohol drinkers. The ingestion of the drug varied according to the habit of the individual, and the daily dose administered varied from 60 to 140 cubic centimetres (2 to 5 ounces) of absolute alcohol, or from four small wineglassfuls (rumka) to half a bottle of a forty-per-cent. or forty-two-per-cent. vodka (aquavit). In other words, a sufficient amount was given to produce a slight intoxication, as high spirits and talkativeness, etc. The results of Mohilansky's study are so important that I will transcribe the principal ones. He found: 1. In people habituated to alcohol, when taken in moderate quantities, it distinctly improves the appetite and gives rise to a marked increase in the assimilation of the nitrogenous constituents of food, the average surplus amounting to 2.09 per cent., the maximal to 4.22. (Thus, a patient who had been assimilating 93.10 per cent. of nitrogen, without alcohol, when this drug was added to his dietary, proved to be assimilating 96.07 per cent. of nitrogen.) 2. In habitual total abstainers, however, the assimilation is somewhat diminished, from .28 to .33 per cent. 3. The increased assimilation in the former category must be attributed to a more complete absorption and intensified gastric digestion, which result from a prolonged retention of food in the stomach on the one hand and from increased digestive power and secretion of the gastric juice (Bernard, Kretschy, Richet, Lever, Petit and Semerie, and Gluzinski) on the other. 4. The nitrogenous metabolism or disintegration of proteids almost invariably decreases (this happened in thirteen out of the fifteen cases), the average fall being 8.73 per cent., the maximal 19.42 and the minimal .14. (For example, in a patient in

whom the metamorphosis on non-alcoholic days had amounted to 80.11 per cent., on alcoholic days it fell to 63.78.) The decrease is frequently observed even when small doses are taken, but it is invariable in the case of moderate or medium quantities. There does not, however, exist any strict parallelism between the dose and the amount of the inhibition of the metabolism. 5. The decrease remains still perceptible for some time, even after the alcohol has been discontinued. 6. It is probably dependent upon the drug inhibiting the systematic oxidation processes (Manassein, Schmiedeburg, and Boecker), and, further, upon its changing the blood-pressure, dilating the blood-vessels, retarding the circulation, and depressing the bodily temperature. 7. Alcohol also diminishes somewhat the assimilation of fats, as it was found that there was an increase in the quantity of fatty acids excreted with the fæces.

Although not strictly within the limits of the present essay, the work of Diakonoff† in this respect is worthy of mention. This author undertook a series of experiments on febrile patients, with the purpose of ascertaining the effects of alcohol on the assimilation and metabolism of proteids. Of the seven patients experimented upon, six were suffering from typhoid fever and one from exudative pleurisy. Of these patients, two were total abstainers and five occasional alcohol drinkers. The drug was administered internally, in the form of a forty-per-cent. vodka (aquavit), four times a day, the daily dose being invariably 50 cubic centimetres (1½ ounces) of absolute alcohol. The diet of the patients was limited to milk and bread, and the treatment was purely expectant. The author obtained the following results: 1. In febrile patients alcohol lowered the assimilation of the nitrogenous ingredients of food. 2. In regard to this effect of alcohol no difference was noticed between habituated and non-habituated individuals. 3. Alcohol spoils appetite and increases both the total daily amount of fæces and the proportion of water and coagulated albumin therein. 4. The drug decreases the quantity of albumin undergoing decomposition in the system. 5. In such cases, where the assimilation of nitrogen sinks but slightly, alcohol lowers the nitrogenous metabolism; where the depression, however, of the assimilation is considerable, the metamorphosis proves to be augmented. 6. Alcohol disturbs the metabolism also inqualitatively, since it raises the proportion of under-oxidized products.

\* *Medical Chronicle*, November, 1889.

† *Medical Chronicle*, January, 1890.



I have not had a sufficient opportunity to make a study of this part of the subject, but it seems to me, from the experimental evidence brought forward, that this points to a well-sustained conclusion in regard to the actions of alcohol on metabolism,—that is, that the drug produces a decided lessening in the excretion of the products of tissue-waste, both in health and disease.

#### ON ANIMAL HEAT FUNCTIONS.

*On Normal Temperature.*—Alcohol affects the animal heat functions in both man and the lower animals proportionately in a similar manner. Under the action of moderate doses there is frequently produced a slight elevation of the temperature corresponding with a stimulating effect upon the circulation. In other words, the rise of the temperature occurs *pari passu* with an increase of the blood-pressure above the normal point. The following record is sufficiently clear:

*Experiment 28.*—Dog; weight, 15.2 kilos.

Time. min. sec.	Pressure. mm.	Rectal temperature. C. scale.	Remarks.
			Pure alcohol used.
0.00	138	40.0	
2.30	138	40.0	Injected 1 c.c. of drug.
3.00	140	40.0	Injection ended.
5.00	144	40.1	
9.00	148	40.2	
14.00	150	40.4	
19.00	150	40.6	Animal restless.
24.00	158	40.8	Dog quiet again.
39.00	150	40.6	
49.00	142	40.4	
59.00	142	40.0	Killed with ether.

This rise of temperature is comparatively of short duration and apparently unimportant, since subsequently it is followed by a depression below normal, especially when larger and toxic amounts of alcohol are ingested. The results of the preceding experiments on temperature are confirmatory of those observed by Richardson\* and by Parkes and Wollowicz.† The latter authors found a trifling exaltation of temperature after doses sufficiently large to increase the activity of the circulation. Richardson noticed that in minute quantities alcohol increased the temperature in mammals .5° F. and in birds 1° F. above the normal.

It has been sufficiently proved that alcohol in large and lethal amounts produces in animals a fall of the bodily temperature. Even as far back as 1848, Dumeril and Demarquay, quoted by Wood, affirmed that alcohol in large

doses causes a marked decrease of the temperature. The truth of this statement has been more recently upheld by the results obtained in the laboratory and in the clinical ward by a host of able observers. I will not burden the reader with an account of each one of these observations, but I believe it will be sufficient for me to refer to the authorities consulted by simply mentioning them. Almost all experimenters are in accord in regard to the action of alcohol on normal temperature, and the names of Anstie,† Binz,§ Bouvier,|| Brown-Séquard,¶ Davis,\*\* Godfrin,†† Jacobi,‡‡ Lewin,§§ Lombard,|||| Mainzer,¶¶ Manassein,\*\*\* Obernier,††† Rabou,‡‡‡ Raziejewski,§§§ Ringer and Rickards,||||| Ruge,¶¶¶ Sulzyski,\*\*\*\* and Tscheschichin†††† may be recalled.

In the experiment that follows,—an example of others performed,—in which toxic amounts were employed, the depression of the temperature, with slight variations, was quite marked. I may here state that, if the dose ingested is fatal, the fall observed is progressive till the occurrence of death.

*Experiment 30.*—Dog; weight, 9.97 kilos.

Time. min. sec.	Pressure. mm.	Rectal temperature. C. scale.	Remarks.
			Pure alcohol used.
0.00	166	39.3	
3.30	166	39.3	Injected 5 c.c. of drug.
4.00	166	39.3	Injection ended.
5.30	162	39.3	
8.30	152	39.2	Injected 10 c.c. of drug.
9.00	150	39.2	Injection ended.
15.00	142	39.0	Injected 10 c.c. of drug.
15.30	140	39.0	Injection ended.

† "Stimulants and Narcotics." London.

§ *Virchow's Archiv*, Bd. ii. S. 153; also *Practitioner*, vol. iii., 1869, and vol. iv., 1870; and *Journ. of Anatomy and Physiology*, vol. viii. p. 232, 1874.

|| *Pflüger's Archiv*, S. 370, 1869; "Wirkung der Alcohol auf die Körpertemperatur," Bonn, 1869; and *Centralbl. f. Med. Wissens.*, December, 1871.

¶ *Journal de la Physiologie*, p. 467, 1859.

\*\* *Transac. Amer. Med. Associat.*, p. 577, 1855.

†† "De l'Alcool, son Action physiologique, ses Applications thérapeutiques." Paris, 1869.

‡‡ *Deutsche Klinik*, 1857.

§§ *Centralbl. f. d. Med. Wissens.*, No. 38, 1874.

|||| *New York Medical Journal*, June, 1865.

¶¶ *Virchow's Archiv*, September, 1871.

\*\*\* *Centralbl. f. d. Med. Wissens.*, 1869.

††† *Pflüger's Archiv*, S. 499, 1869.

‡‡‡ *Berlin. Klin. Wochenschr.*, 1871.

§§§ *Centralbl. f. d. Med. Wissens.*, 1871.

||||| *London Lancet*, p. 208, 1866.

¶¶¶ *Virchow's Archiv*, Bd. xlix., S. 265.

\*\*\*\* "Inaugural Dissertation." Dorpat, 1865.

†††† *Reichert's Archiv*, 1866.

\* *Medical Times and Gazette*, vol. ii. p. 704, 1869.

† *Transactions of the Royal Society*, 1870.

Time. min. sec.	Pressure. mm.	Rectal temperature. C. scale.	Remarks.
16.00	135	39.0	Animal struggles.
21.00	132	38.8	Injected 10 c.c. of drug.
21.30	130	38.8	Injection ended.
26.30	120	38.6	Dog quiet; eye re- flexes weak.
31.30	112	38.4	Clot for 5 minutes.
37.00	108	38.3	
42.00	98	38.2	Eventually killed with ether.

It is thus demonstrated beyond doubt that alcohol in sufficiently large quantities diminishes the bodily temperature in the lower animals the same as it does in man.

This action, however, is not the same in the case of abstainers and of habitual drinkers. In the first class of individuals the depressing influence is usually produced, but in those persons addicted to the habitual use of alcoholic stimulants the effect is either slight or totally wanting. This is an almost every-day observation. In this respect I may call attention to the elaborate research of Riegel,\* who performed eighty-six experiments on man, with the object of studying the behavior of the drug on bodily temperature. He found that alcohol, even in moderate doses, in many cases causes a lowering of the temperature of the body, the amount of this diminution averaging, as a rule, only some tenths of a degree; that only exceptionally is there noticed an elevation of the temperature consequent upon the administration of alcohol, and that not infrequently, at least after minute doses, there is no noticeable change; that the diminution of temperature in convalescents is, as a rule, less than in healthy subjects, or it may altogether be absent; that in those who habitually drink alcoholic stimulants the depressing influence of the drug upon the temperature is almost always wanting; that frequent repetition of the doses of alcohol diminishes their lowering effect upon the temperature; that the amount of diminution of temperature is directly proportional to the dose of alcohol ingested; and that, finally, the depression of temperature caused by alcohol is for the most part of but short duration, and the temperature soon returns to its previous grade. These statements are in accord with the results obtained by most investigators, as well as with those of my own experiments, and they may, therefore, be said to be entirely correct.

Although the action of alcohol on thermogenesis may be said to be an indirect one, judging from the light of modern research,

it would be interesting to ascertain, if possible, how these heat phenomena are brought about. Here I may say that the deductions of Binz† must be laid aside as of no great value on the basis of recent elaborate researches.

The first calorimetrical studies regarding the actions of alcohol were made by Lewis‡ on rabbits. The author found that the drug sometimes produced a primary decrease of heat production, especially after small doses, followed, under the influence of large quantities, by an increase in the same phenomenon. Later, Wood and Reichert,§ who experimented on dogs, found varying results in five experiments, although in some of these heat dissipation kept in advance of the heat production, and, as a consequence, the temperature was lowered. Sometimes, however, the heat production was above the dissipation, resulting, in such instances, in a rise of the bodily temperature. The subject has been further investigated recently by Reichert.|| The able and thorough research of this author is based upon eighteen experiments performed on dogs, using the ordinary calorimeter described by him.¶ Reichert obtained increased heat production in five and decreased heat production in thirteen of the experiments. The difference did not depend upon the size of the dose employed. The range of variation in the general results was as much as sixty-five per cent. He determined, however, that alcohol does not affect the total quantity of heat produced; that the fall of the bodily temperature is due to the excess of dissipation and is in direct proportion to such dissipation. He infers, therefore, that in all likelihood, alcohol, by undergoing oxidation, yields energy in the form of heat, thus conserving the tissues and acting as a food. The question, nevertheless, cannot be considered definitely settled, and further experimentation in this respect is still wanting in order to reconcile, if possible, all beliefs. The results of Reichert, however, carry the weight of authority, and may be said to be correct in the present state of our knowledge of this interesting part of the subject.

*On Febrile Temperature.*—That alcohol exercises a depressing influence on febrile temperature, both in man and the lower animals, there can be no doubt. Thus, Bouvier\*\* has

† *Loc. cit.*

‡ *Journal of Mental Science*, vol. xxvi.

§ Wood's "Therapeutics," 8th edition, p. 343, 1891.

|| THERAPEUTIC GAZETTE, February, 1890.

¶ *University Medical Magazine*, January, 1890.

\*\* *Loc. cit.*

noticed that the drug exerts a marked antipyretic action in animals laboring under pyæmic fever. Alcohol in such cases diminished the temperature as much as  $8.5^{\circ}$  C. ! and it was further found that the fever could be prevented if the alcohol was pushed before the appearance of the pathological condition.

The same results have been observed by Ringer and Rickards\* in the case of man, but these authors assert that large and perhaps toxic doses of alcohol have to be ingested before the antipyretic effects occur. As observed by Bouvier,† Riegel,‡ and others, alcohol, even in large amounts, fails to affect the temperature in individuals accustomed to the use of the drug.

There can be no question that alcohol is able to reduce febrile, as it does normal, temperature both in the case of man and the lower animals. In the first instance the action is sustained by clinical observations, and in the second by experimental evidence. I myself have verified this antipyretic action of alcohol. To do this a feverish condition in dogs was produced by the administration of putrid blood.

Two days were employed in each experiment. During the first day it was ascertained only whether the specimen of blood used was sufficiently powerful to produce fever without causing other marked disturbances. During the second day the fever-producing agent and the alcohol were given to the animal at the same time. It was found, then, that the alcohol not only kept the temperature from rising, but even reduced it below the normal standard, these changes depending more or less upon the amount of alcohol ingested. It will be sufficient for me to detail the following experiment:

*Experiment 32.—Dog; weight, 20.12 kilos.*

#### FIRST DAY.

##### *In the Normal State.*

Time.	Temperature. C. scale.
First hour.....	$39.4^{\circ}$
Second hour.....	$39.4^{\circ}$
Injected 5 drops of putrid blood.	

##### *In the Fever State.*

End of first hour.....	$40.5^{\circ}$
Injected 5 drops of putrid blood.	
End of second hour.....	$41.5^{\circ}$
Injected 5 drops of putrid blood.	
End of third hour.....	$41.8^{\circ}$

\* *Loc. cit.*

† *Loc. cit.*

‡ *Loc. cit.*

#### SECOND DAY.

*Dog reduced to 10 kilos.*

Time.	Temperature. C. scale.
First hour.....	$39.6^{\circ}$
Injected 5 drops of putrid blood and 5 c.c. of alcohol, repeating the latter every ten minutes.	
End of second hour.....	$39.6^{\circ}$
Injected 5 drops of putrid blood and the alcohol as before.	
End of third hour.....	$39.6^{\circ}$
Injected 5 drops of putrid blood and the alcohol as before.	
End of fourth hour.....	$39.0^{\circ}$
End of fifth hour.....	$38.3^{\circ}$
End of sixth hour.....	$38.8^{\circ}$

Other experiments gave identical results. The evidence, therefore, is conclusive.

(To be concluded.)

#### STATUS OF THE HYPODERMIC USE OF MERCURIALS IN THE TREATMENT OF SYPHILIS.

READ BEFORE THE PHILADELPHIA COUNTY MEDICAL SOCIETY, APRIL 25, 1894.

BY L. WOLFF, M.D.,

Clinical Professor of Medicine, Women's Medical College of Pennsylvania; Physician to the German Hospital of Philadelphia, etc.

A YEAR ago I read at a meeting of this Society a communication on the subject of hypodermic medication in syphilis, which I prefaced with the remark that "among the therapeutic methods which are largely employed on the continent of Europe, but have found very few adherents in this country, is, no doubt, the 'hypodermic treatment of syphilis.'" This part of my paper seems to have been one of the points that was principally attacked in the discussion following it, as well as in a subsequent classical paper by Dr. J. W. White on "The Present Position of the Hypodermic Treatment of Syphilis." While in this last-mentioned article Dr. White quoted the opinion of some thirty-two American dermatologists and syphilographers, only three expressed themselves favorable to this method; the others state themselves more or less opposed to it. He also states that in Germany some of the best men have pronounced against it, and in France Fournier, also Hutchinson in Great Britain, arrayed themselves against its use. In quoting Fournier, the rather feeble argument is brought forward that he feared the method would cause a rapid disappearance of patients while producing possibly a rapid disappearance of the disease.

One of the arguments advanced against this treatment as practised by me was its short duration, twenty-five or thirty injections being only given, as a rule. To impute that I stopped treatment after this, as has been stated, is to misquote me, as I distinctly recommended in my paper the internal use of iodides for some months thereafter. Relapses may require, moreover, further series of injections, as this is practised in all the so-called opportunists' methods for the treatment of syphilis. To say that, if the curative effects of mercury could be obtained in such a short period and with such small quantities, mercury must have some virtue when given in this way which it does not possess when administered by other methods, is partly true. No one will presume that, of the many ounces of mercury given during the internal treatment for years, all of it will be absorbed and become thereby the truly medicating quantity. Whoever has noticed the gastric and intestinal disturbances created by the mercurials, together with the colitis and even bloody diarrhoeas caused by it, cannot for one moment doubt that much more of the mercury, so ingested, proves of greater danger to the gastro-intestinal tract than of benefit to the syphilis process. Besides all this, the perhaps universally-granted method of achieving the best and most lasting results—*i.e.*, the method by mercurial inunctions—rarely extends over thirty to thirty-five days, and it would appear, therefore, that, arguing from the same stand-point, mercury by inunction acquired the same mysterious curative virtues that have been so sceptically referred to as pertaining to the injection method. It is scarcely within the province of this article to take up the much-argued question of the superiority of the continuous and intermittent prophylactic method of medication over the expectant symptomatic one of the opportunists. I would merely refer in connection therewith to an article by Professor E. Lang, in which he criticises Professor Fournier's statistics of the relations of tertiary symptoms to the duration of treatment, and where he states, after analysis of the tables of Professor Fournier, that, so far from exerting a favorable influence in cases of syphilis, the method of prolonged treatment recommended by Professor Fournier is apt to produce a deleterious effect on the patient's general health by giving rise to various alimentary troubles associated with insomnia and other nervous symptoms of a somewhat grave description and favoring the occurrence of tertiary manifestations. For example, the statistics communicated by Professor Fournier to the First International Congress of Dermatology in

1889 show that the liability to tertiary manifestations increased in his patients until the third year after infection, a fact which is in direct opposition to the experience of the advocates of the opportunists' method, who have never met with the same liability to tertiary accidents during the first three years after infection in the patients under their observation (*Med. Week*, vol. i., No. 47). In the same manner Kaposi (*Wiener Med. Wochenschrift*, No. 4, 1894) expresses himself as opposed to the continuous treatment, which has been so strongly recommended by numerous syphilologists. He considers it as both morally and physically disadvantageous, and thinks the first treatment should be long and carefully executed. The treatment is to be repeated only when true syphilitic manifestations present themselves again. For this purpose mercurial inunctions should be considered first of all, and, where these are impracticable, injections should be next in order. The hypodermic method is eminently an expectant symptomatic one, and the divided opinions on the subject of continuous and intermittent prophylactic treatment *versus* that of the opportunists, by such authorities as just quoted, must also apply in principle to it.

It is to be conceded, therefore, that the objections to the hypodermic treatment are not alone those applying to this method of mercurialization, but one also of school,—*i.e.*, to the periodic treatment in the order as the re-appearance of symptoms requires it. As perhaps a compromise between the continuous and intermittent treatment, Edward Cotterell, in his monograph on "Syphilis: Its Treatment by Intramuscular Injections of Soluble Mercurial Salts" (London, John Bale & Sons, 1893), recommends the intramuscular injections of the sozoiiodolate of mercury, which he uses in the doses of about  $\frac{1}{4}$  grain dissolved in iodide of sodium, once a week for about six or seven weeks, or until all skin and throat manifestations have disappeared, when once a fortnight will be found sufficient for another three or four months, and after this once a month for at least eighteen months to two years or longer, as circumstances may require. What such medication of about one-quarter of a grain of this salt, which contains about one-third of its weight or less of mercury, once a month can accomplish in its influence over the syphilis process is not obvious, and, after all, the effect of the treatment, the results of which he praises so highly, must depend on the massive injections during its first period.

As our methods of treatment are modelled

largely by the teachings of our schools, and as these latter in this country are greatly influenced by the literature of the English-speaking mother country, it is not astonishing that our practitioners should follow the teachings of Hutchinson and the practices of Fournier.

In Continental Europe the two predominating nationalities in medical education are those of France and Germany, and as independent medical centres their doctrines diverge often as greatly as their languages. Thus, the great centre for teaching syphilology in German-speaking Europe has always been Vienna, with its great and magnificent Allgemeines Krankenhaus, whence for many years the teachings of Sigmund, Zeissl, Hebra, Kaposi, Neumann, and others have formulated the doctrines which dominated the German-speaking practitioners.

In view of this, and with the object of presenting a consensus of opinions, not alone of one country and one school, but of the leading minds occupied with syphilology in the principal medical centres of the world, I have undertaken to obtain from most of the teachers of this branch of medical science an expression of opinion in regard to this subject, and in response to my inquiries I have the pleasure to acknowledge the receipt of forty-four letters, all from men well known both as authors and teachers on this subject in the principal universities of Europe.

I first thought it necessary to ascertain if they employed the hypodermic method, for I cannot consider that any one can speak of its merits without experience. I further on desired to know the respective mercurial employed by them in this way, as much might be learned as to the utility of some particular one. Whether among these the soluble or insoluble ones are preferred I also tried to ascertain. Again, I considered it of importance to learn which was thought the most rapid in action and the most permanent in effect. To know if the method was employed in general or in isolated instances only seemed to me an important item in connection with the weight that the correspondent's opinion might carry. While the period of treatment by the hypodermic method seems generally conceded, an individual expression of opinion on this point was also solicited. The disadvantages and untoward effects of this treatment have been made use of so much as an objection to its employment, that I further begged for the experience of the individual observers in this respect. It seemed but proper, also, to ascertain if, in their opinion, the methods were well established or had an ephem-

eral existence only. The question whether this method should be continued or abandoned as a regular treatment for syphilis might with justice be asked of those who had experience with it; and, lastly and principally, it occurred to me to elicit what relation this treatment bore to the time-honored oral ingestion of the drug, and whether the correspondent considered the hypodermic method had largely superseded the administration of mercury by the mouth in the treatment of syphilis. While in these ten queries I endeavored to elicit the opinion of my correspondents, I also asked that such general remarks should be added as might be thought necessary and not covered by my questions.

Before entering upon the responses obtained to my questions, I should mention the names and titles of the gentlemen who have so kindly favored me with their answers.

Those from Vienna are the Professors of Dermatology and Syphilology, Kaposi, Neumann, Lang, and Hans von Hebra, whose clinics for syphilis and dermatology at the Allgemeines Krankenhaus are known the world over; the Docents of Dermatology and Syphilis at the Vienna University, Drs. G. Riehl, Franz Mraceck, E. Kohn, and Max. von Zeissl; from Prague, the Professors of Dermatology and Syphilis at the University there, F. J. Pick and V. Janovsky; from Budapest, Professor of Dermatology and Syphilis, E. Schwimmer, and the Docent for the same branches, Dr. Havas; also Dr. Alex. Zarewicz, Docent at the University of Krakau; from Berlin, Professor Dr. O. Lassar, Professor Schweninger, and his assistant Dr. Buzzi, also Dr. J. Behrend; from Königsberg, Professor Caspary; from Bonn, Privy Medical Councillor Professor Dr. Doutrelepon; from Munich, Dr. Kopp, Docent at the University; from Helsingfors, Russian Finland, Professor Dr. George Smirnoff; from Kieff, Russia, Ord. Professor and Councillor of State Dr. M. Stoukovenkoff; from the St. Petersburg Military Medical Academy, Professor A. Polotebnov; from Charkow, Russia, Professor Brouen; from Amsterdam, Professor D. Van Haren Noman; from Florence, Italy, Professor Celso Pellizzari; from Genoa, Professor Roberto Campana; from Padua, Professor Achille Breda; from Bologna, Emerit. Professor Pietro Gamberini; from Pavia, Professor Angelo Scarenzio; from Catania, Professor Priano Ferrari; from Siena, Professor Domenico Barduzzi; from Lille, France, Professor I. Leloir; from the Military Medical Academy of France, Professor Dr. T. Poncet; from Geneva, Switzerland, Dr. H. Oltramare; from Berne, Dr.

Adolf von Ins, Docent at the University; from Edinburgh, Dr. Ed. Allan Jamieson; from London, Drs. H. Radcliffe Crocker, also S. Mackenzie and Ad. Saugster; from Glasgow, Professor McCall Anderson; from Brussels, Belgium, Professor Dr. Thiery, and from Gaud, Dr. Cruyl, chief of the Dermatological and Syphilitic Division of the Civil Hospital there; also, from this country, Dr. J. C. Wilson, Professor of the Practice of Medicine at the Jefferson Medical College, who was one of the first to use the calomel injections here.

It must be acknowledged that my correspondents represent the principal centres of learning in Europe, that they are all teachers of renown, and they must therefore truly picture the practices of those countries. It can hardly be said of them, as has been stated of the adherents of the hypodermic method, that they are therapeutic enthusiasts, or that they have been selected for the purpose of glorifying this treatment.

In answer to my first question, "Do you employ the hypodermic treatment for syphilis?" the answers are as follows:

Yes, by Kaposi, Neumann, Riehl, Mraceck, Kohn, Zeissl, Pick, Janovsky, Schwimmer, Havas, Lassar, Doutrelepon, Kopp, Brouen, Pellizzari, Breda, Baruzzi, and Wilson; very often,—Lang, Finger; as a rule,—Hebra; with predilection in private and clinical practice,—Schwimmer; in private practice rarely, in hospital practice almost exclusively,—Zarewicz; yes, but not exclusively,—Schweninger; yes, with preference,—Caspary, also Smirnoff; exclusively,—Stoukovenkoff; almost exclusively, with exception of cases of great hyperæsthesia, as in nervous diseases and brain syphilis,—Polotebnoff; yes, but not exclusively; in all cases of beginning secondary, excepting in pregnancy,—Noman; for some years intramuscular injections in preference to subcutaneous,—Gamberini; the benefits of the hypodermic method cannot be excluded from the treatment of diseases of an infectious nature,—Scarenzio; ordinarily,—Ferrari; yes, but not in all cases,—Leloir; yes, I have employed it, but I will employ it hereafter only in exceptional cases,—Poncet; only rarely now, after having had most disagreeable experience with insoluble preparations,—Von Ins; yes, very often, especially if I have the patient under my own eye, or if I wish a very rapid result,—McCall Anderson; yes, in grave cases, and more often in hospital than in private practice,—Cruyl; I use only inunctions in hospital practice, and can therefore say nothing regarding hypodermic injections,—Behrend; I find it impossible to an-

swer the questions in brief, but have always been an enthusiastic supporter of the hypodermic method, and refer for further information to my book, which I send along,—Roberto Campana; employed it so little that I cannot possibly answer the questions,—Oltramare; no,—Jamieson, Crocker, Mackenzie, and Saugster; do not employ it,—Thiery.

As a *résumé* of the answers to the first question, we can say that thirty-six of the correspondents have used and use the hypodermic treatment in syphilis, while one does not answer the questions categorically, but refers to his writings on the subject, and seven acknowledge that they have not used or do not use the treatment, and these cannot, therefore, be considered in the answers to the future questions.

To the second question, "Which of the mercurials do you principally employ?" I have the following answers:

Corrosive sublimate (five per cent.), one injection every week (.05), five to eight injections in all, method introduced by my former assistant, Professor Lukasiwicz,—Kaposi; sublimate, calomel, soziodolate, and peptonate of mercury,—Neumann; I use almost all known preparations,—Lang; sublimate and bichloride,—Riehl; for subcutaneous, sublimate (1 to 100); for intramuscular, salicylate,—Finger; sublimate with chloride of sodium,—Mraceck; sublimate,—Hebra; sublimate (.1 to 20),—Kohn; sublimate, albuminate, and formamidate,—Zeissl; salicylate,—Pick; salicylate, thymol acetate, calomel, and soziodolate,—Janovsky; since two years generally soziodolate, and sublimate for more than ten years,—Schwimmer; gray oil, sublimate, and calomel,—Havas; yellow oxide and, of late, gray oil,—Zarewicz; sublimate,—Lassar; calomel and salicylate,—Schweninger; sublimate,—Caspary; in general, salicylate,—Doutrelepon; insoluble mercurials,—Kopp; in the clinic for the purpose of instruction, insoluble mercurials, also sublimate; in private practice only calomel,—Smirnoff; benzoate of mercury, as introduced by me,—Stoukovenkoff; formamidate,—Polotebnoff; salicylate,—Brouen; sublimate, calomel, gray oil, yellow oxide, salicylate, thymol acetate,—Noman; calomel, sublimate, double iodide of mercury, and sodium,—Pellizzari; sublimate, calomel, yellow oxide, salicylate,—Breda; sublimate,—Gamberini; calomel in vaseline oil,—Barduzzi; sublimate exclusively,—Leloir; calomel,—Poncet; salicylate,—Von Ins; bichloride,—McCall Anderson; sublimate in olive oil,—Cruyl; calomel,—Wilson.

A summary of the answers to the second

question would show that almost all the preparations of mercury generally employed for hypodermic medication are used by my correspondents, some only using one, others a few, while others, again, seem to use all the preparations more or less. The ratio in which the different preparations are used by them, as elicited by my answers, are: sublimate by 22 of the 36; calomel, 14; salicylate, 12; yellow oxide, 6; sozoiolate, 4; gray oil, 4; formamide and peptonate, also thymol acetate, each 2; while albuminate, cyanate, benzoate, and the double iodide were each employed by one out of the 36.

The inference to be drawn herefrom is that, after all, the corrosive sublimate seems to be most general in use for this purpose, with calomel next, salicylate following; yellow oxide, sozoiolate, and gray oil, with the others more rarely used, gradually showing a decrease in their general employment.

While this does not show the individual preference of the different observers for soluble or insoluble preparations, the third question, "Which do you prefer, the soluble or insoluble mercurials?" was intended to bring out the preference, if any, for either of these two classes.

The answers are as follows: Soluble, Kaposi, Neumann, Riehl, Mraceck, Hebra, Kohn, Zeissl, Schwimmer, Lassar, Caspary, Stoukovenkoff, Polotebnoff, Breda, Gamberini, Ferrari, Barduzzi, Leloir, Von Ins, McCall Anderson, and Cruyl.

The insoluble mercurials are preferred by Wilson, Poncet, Scarenzio, Noman, Brouen, Smirnoff, Kopp, Doutrelepont, Havas, Janovsky, and Pick; depends on indications,—Lang; uses both,—Finger; prefers insoluble, but uses the organic soluble where indicated,—Zarewicz; undecided,—Schweninger; as per indications, soluble and insoluble,—Pellizzari.

It would appear therefrom that the preference for the soluble mercurial for hypodermic use is very decided, being indicated by twenty, while eleven state their preference for the insoluble preparations, one is undecided, two give no preference for either, and are governed by indications, while two declare they have no preference.

My fourth question, "Which, in your opinion, is the most rapid in action and the most permanent in effect?" seems to have been the most difficult to answer, and the responses obtained from my correspondents are in this instance not as direct as might be desirable. Thus, Kaposi states it different in every case, and says it cannot be answered in a general

way; soluble,—Neumann; refers to publications,—Lang; soluble preparations perhaps equal in effect,—Riehl; insoluble preparations more energetic than soluble, effect more permanent,—Mraceck; soluble less energetic, less permanent,—Finger; sublimate,—Kohn; most rapid, calomel; saw relapses after all preparations; cannot prefer on that account,—Zeissl; cannot say that the other insoluble preparations are better in this respect,—Pick; calomel; but injections are painful, followed by infiltrations, notwithstanding vigorous antiseptics,—Janovsky; no difference with any of them,—Schwimmer; the soluble are more rapid, the insoluble more permanent,—Havas; yellow oxide and calomel; has not been able to satisfy himself as to the rapid and eminent action of salicylate,—Zarewicz; no real difference in action or in permanency in the different preparations,—Lassar; besides inunctions, salicylate,—Schweninger; probably calomel, which, after bad experience, I do not use any more,—Caspary; a great difference cannot be observed; also refers to literature from the clinic of Bonn,—Doutrelepont; rapidity of action, sublimate with chloride of sodium; permanency in effect, calomel,—Kopp; calomel and gray oil, the latter somewhat dangerous on account of the irregular absorption,—Smirnoff; the soluble mercurials, preferably those that do not coagulate albumin,—Stoukovenkoff; does not depend on the preparations, but on the individuality of the patient,—Polotebnoff; insolubles,—Brouen; yellow oxide and thymol acetate,—Noman; calomel,—Pellizzari; calomel is most rapid and durable in action,—Breda; sublimate more beneficial than calomel,—Gamberini; calomel gives the most prompt benefits, but all mercurials have about equal value,—Scarenzio; sublimate,—Ferrari; soluble,—Barduzzi; no answer,—Leloir; calomel,—Poncet; inunction,—Von Ins; never uses any other preparation than sublimate,—McCall Anderson; sublimate,—Cruyl; calomel is less rapid, but apparently more permanent,—Wilson.

The answers to this question are perhaps the least satisfactory of all, as they show seven of indirect, or rather of indefinite, character. The preference for rapidity in action and permanence in effect is given to calomel by nine of the correspondents, while two declare sublimate more rapid and calomel more permanent in effect. Six speak in favor of the soluble and five of the insoluble, five regard sublimate superior, while two endorse yellow oxide in this respect, and one each salicylate, gray oil, and thymol acetate.

My fifth question, "Do you employ the hypodermic method as a general treatment for syphilis?" is answered as follows:

Yes,—Kaposi, Kohn, Pick, Schweninger, Doutrelepont, Stoukovenkoff, Noman, Barduzzi, Cruyl, and Wilson; in some cases one can only apply the hypodermic method,—Neumann; gray oil in doses of .03 to .04 metallic mercury,—Lang; no, I prefer as first treatment inunctions,—Riehl; no answer,—Finger; only in proper cases,—Mraceck; generally,—Hebra; as a rule, inunctions; injections when these cannot be made,—Zeissl; yes, but as a secondary treatment after inunctions,—Janovsky; in my clinic nearly as the unique application of mercury, but also often inunctions,—Schwimmer; in exceptional cases only, as I can always get along with inunctions,—Havas; in my opinion, injections are most suitable and surest in hospital practice, otherwise the treatment is to be individualized,—Zarewicz; yes, besides inunctions principally in out-door patients,—Lassar; at least often,—Caspary; indeed,—Kopp; yes, decidedly as the principal method, excepting in tuberculosis, cancer, alcoholism, and non-syphilitic cachexia,—Smirnoff; usually,—Polotebnoff; as a general treatment,—Brouen; no,—Pellizzari; yes, in certain minor cases, especially with regard to clinical patients,—Breda; I do not use them in general; intramuscular injections as the prevalent treatment,—Gamberini; I prefer the hypodermic method as more simple and because it does not derange the stomach, also because the dosage can be more accurately regulated,—Scarenzio; the hypodermic method is by me ordinarily used,—Ferrari; no,—Leloir; no,—Poncet; formerly more, now only occasionally,—Von Ins; only as such,—McCall Anderson.

We see, therefore, from the answers to this question, that twenty-six responses indicate the general employment of injections as a treatment for syphilis, while one of the correspondents omits the answer to the question, and four answer in an indefinite and indirect manner, leaving inferences open therefrom, and five distinctly state that they do not generally employ it as a treatment for syphilis.

My sixth question, "What length of time do you continue the hypodermic treatment in the average case?" has brought the following answers:

Six to eight weeks,—Kaposi; soluble twenty-five days,—Neumann; gray oil, once in intervals from three to four days, and with beginning retrograde change once in five, seven, or fourteen days; altogether eight, ten, or twelve such doses,—Lang; twenty to forty

injections and more in relapses,—Riehl; no answer,—Finger; until the disappearances of the existing manifestations,—Mraceck; on an average three to five weeks, in rare cases very much longer,—Hebra; up to three months, unless abscesses or painful infiltrations prevent continuation,—Kohn; until the manifestations of syphilis have entirely disappeared,—Zeissl; indefinite answer,—Pick; till the disappearance of the symptoms,—Janovsky; ten to twelve of sozoiodolate and of salicylate, twenty to fifty sublimate, twenty-five to thirty-five of formamidate, one and a half to two months on an average,—Schwimmer; in cases where I am forced to use the hypodermic method I continue until manifestations have disappeared,—i.e., four to five injections,—Havas; usually until entire disappearance of symptoms,—Zarewicz; two months of .2 a week, or .1 a week, if patients are feeble,—Lassar; until disappearance of momentary syphilitic lesions,—Schweninger; about thirty days,—Caspary; as long as luetic symptoms are apparent and no mercurialism takes place; anyhow, twelve to eighteen injections of salicylate, each .08 to .1, in pauses from three to four days,—Doutrelepont; from six to eight weeks, one injection per week of 1 to 10 salicylate in paraffin oil,—Kopp; according to the cases, from one month to many months, from four to six, twelve, sixteen, or eighteen of .1 calomel,—Smirnoff; about one month,—Stoukovenkoff; according to case and always until disappearance of symptoms,—Polotebnoff; until disappearance of symptoms from four to six weeks,—Brouen; four to six weeks,—Noman; of calomel two or three injections at intervals of ten, of the soluble generally twenty to thirty days,—Pellizzari; of calomel three to six injections of .05 to .1, of sublimate .01 to .05 for one to two months,—Breda; no answer,—Gamberini; until all symptoms have disappeared,—Scarenzio; ordinarily, I make twenty-five to thirty injections, one every day,—Ferrari; variable,—Barduzzi; no answer,—Leloir; three to four injections of calomel,—Poncet; about four weeks for one attack,—Von Ins; until all symptoms are gone, and then use some treatment by the mouth,—McCall Anderson; during the primary and secondary stages,—Cruyl; in series of six to eight injections, repeated at intervals of two or three months or longer,—Wilson.

It is rather difficult to summarize the answers to question No. 6, although there seems to be a general tendency to continue the treatment up to the disappearance of all the symptoms, an opinion expressed by eleven of my correspondents; five continue the treatment



with sublimate injections for twenty or thirty days, one six to eight weeks, one two months, one three months; of calomel injections, from two to three, four to five, six to eight are given by six correspondents; eight, ten, and twelve of gray oil by another; ten to twelve of sozoiodolate, and twelve to eighteen of salicylate; while still another gives of the formamidate, in one and a half to two months, twenty-five to thirty-five injections; the benzoate is continued for one month by one, while three answer the question indefinitely, and three more not at all.

The answers to question No. 7, "What are the disadvantages and the untoward effects, if any, of the hypodermic treatment in your experience?" are somewhat variable and will be found difficult to classify.

The answers are as follows:

Reference to his publications,—Kaposi; in some cases dysentery,—Neumann; if only one dose, as stated, is injected at a time and the period of administration is observed, there will be no surprises from disagreeable accidents,—Lang; nothing,—Riehl; in the intramuscular injections of salicylates made superficial not very painful infiltrations; I never saw abscesses only with calomel, which I do not use; therefore, hypodermic injections have for practical reasons a disadvantage that they have to be made daily,—Finger; with antiseptic precautions we have only the ordinary appearance of mercurialism,—Mracek; when well applied, no disadvantages; had within ten years scarcely any untoward effect,—Hebra; abscesses, induration, pains,—Kohn; I have met, as with inunctions, salivation and gingivitis; with good injections and antiseptic precaution, I have seen with no preparation, soluble or insoluble, any abscesses,—Zeissl; I have never met with a fatal accident,—Pick; I could not see disadvantages, only infiltrations after calomel, and the best effects in regard to treatment,—Janovsky; I am always satisfied with this method, and have never seen disadvantages when injections were made with a clean needle and the general postulates of cleanliness,—Schimmer; in spite of careful dosage, assimilation of mercury is individual and not controllable; I have seen very marked mercurialism in some cases, such as anæmia, headache, anorexia, tremor, diarrhoea, and marked depression,—Havas; after hypodermic use of calomel I have seen one fatal case; after gray oil follow infiltrations and abscesses; gray oil is, moreover, very slowly absorbed,—Zarewicz; none at all,—Lassar; none,—Schweninger; no disadvantage from sublimate injections where they are well

borne; the advantage is accurate dosage,—Caspary; infiltration at the place of injection, stomatitis, and other mercurial symptoms, as they happen with every method,—Doutrelepont; cleanliness, prompt involution of symptoms, accurate dosage; applicable, especially in polyclinic and private practice, where inunction cannot be very well used,—Kopp; only in isolated cases marked pain, very seldom an abscess; the curative effect rarely ever fails,—Smirnoff; with correct employment one cannot have disagreeable complications,—Stoukovenkoff; advantages, rapidity and permanence of action, cleanliness of the method; disadvantages, at times local pain,—Polotebnoff; pains and indurations, sometimes at the place of puncture,—Brpuen; sometimes pain for twelve to fourteen hours; in some very rare cases an abscess,—Noman; pain in the use of sublimate and the other soluble salts; small abscesses occasionally when using calomel,—Pellizzari; with calomel in about four hundred cases, two abscesses, two enterocolites, four stomatitis, one sciatica; with sublimate one abscess, one stomatitis; with yellow oxide, in about one hundred cases, two enteralgias, with diarrhoea; with salicylate in eighty-five injections, one fever, five infiltrations, one gastroenteralgia,—Breda; indefinite answer,—Gamberini; unless you exceed proper dose, no danger or disadvantage,—Scarenzio; I have not one disadvantage to report,—Ferrari; none,—Barduzzi; refers to his publications,—Leloir; the injections of calomel are often painful; the action of calomel causes a general depression,—Poncet; stomatitis, bloody stools, hæmatemesis, collapse, which fortunately does not end fatally,—Von Ins; indurations, but rarely abscesses if proper precautions are used,—McCall Anderson; refers to literature,—Cruyl; pain, occasionally severe, though transient, and now and then nodular infiltration of tissues; in a very few instances abscess formation,—Wilson.

An analysis of this last series of answers shows that four correspondents give no direct information on the subject, but refer to publications; seventeen state that there are no disadvantages from the use of the soluble mercurials; while four mention the following disadvantages from the injection of this kind: one, dysentery; two, abscesses; one, mercurialism. In regard to insoluble mercurials, six report no disadvantages, while four report abscesses from calomel and from gray oil; two of the correspondents seem to have been particularly unfortunate with their experiences; one reports with calomel two abscesses, two entero-

colites, four stomatites, one sciatica; with sublimite, one abscess, one stomatitis; with yellow oxide, in about one hundred cases, two enteralgias with diarrhoea; with salicylate, in eighty-five injections, one fever, five infiltrations, and one gastro-enteralgia; while the other reports stomatitis, bloody stools with hæmatemesis, collapse, which, fortunately, did not end fatally. Truly, their experience seems to be quite at variance with that of others. One correspondent alone refers to a fatality from the use of calomel.

In view of the fact that it has been stated that the hypodermic method is not one that is well established, and that it lacked perfection, question No. 8, "Do you consider the hypodermic method well established?" is intended to elicit answers of great importance.

The answers are as follows:

Yes,—Kaposi, Neumann, Riehl, Zeissl, Pick, Janovsky, Caspary, Doutrelepon, Stoukovenkoff, Noman, Pellizzari, Barduzzi; it is only beginning to be appreciated in America,—Wilson; yes, certainly,—McCall Anderson; indefinite,—Von Ins; indefinite,—Poncet; no answer,—Leloir; the wide adoption of this method vouches for its stability,—Scarenzio; indefinite,—Gamberini; yes, I consider the hypodermic method as perfectly established on the best basis,—Breda; I believe this method is well established,—Polotebnoff; yes, perfectly,—Smirnoff; yes, I made until to-day more than one thousand injections without seeing abscesses; sometimes they are somewhat painful, there are nodular indurations at the point of injection, but the discomfort soon disappears,—Kopp; no,—Schweninger; perfectly,—Lassar; as a method by which the mercury can be introduced into the organism, yes; as exclusive treatment of syphilis, no,—Zarewicz; for the above-cited reasons it undoubtedly needs reform,—Havas; perfectly,—Schwimmer; a great many more experiences must be made in this method,—Kohn; very well,—Hebra; well established as a therapeutic method,—Mraceck; I consider the injection method well established, and on account of its accurate dosage scientifically rational,—Finger; I am perfectly satisfied that the method will gain adherents,—Lang.

While, in answer to this question, four of my correspondents give an indefinite answer from which no deduction can be drawn, one fails to state anything, and three consider it as not well established, twenty-eight give an unqualified approval as to the firm establishment of this method.

It has been further stated that many of those

who had used the hypodermic method, among them some of the best men both here and abroad, after thorough trial have discontinued its employment in the treatment of syphilis. My question No. 9, "Should it, in your opinion, be continued or abandoned as a regular treatment for syphilis?" will probably show the opinion of syphilographers abroad on this point.

The answers are as follows:

Continued,—Kaposi, Neumann, Mraceck, Hebra, Pick, Janovsky, Caspary, Doutrelepon, Kopp, Brouen, Ferrari, Barduzzi; by all means continue,—Wilson; to be continued always according to indications,—Cruyl; continued in suitable cases,—McCall Anderson; there is nothing against the hypodermic injections of soluble mercurials, and I therefore only use those,—Von Ins; this method is to be continued for grave cases,—Poncet; to continue, but to be employed with method,—Leloir; without doubt,—Scarenzio; I taught it as the most commendable,—Breda; I consider the hypodermic method is to be continued, but not as a general and exclusive treatment for all cases of syphilis,—Pellizzari; it should be continued as a regular treatment for syphilis without very alarming complications; in cases of iritis or brain syphilis, etc., we prefer the inunction treatment,—Noman; I will never give up this method,—Polotebnoff; syphilis requires a systematic treatment during two to three years, with intervals always more prolonged after each treatment,—Stoukovenkoff; calomel injections will, aside from inunctions, be the most powerful and most reliable method for mercurial treatment; calomel injections act even stronger than inunctions,—Smirnoff; I am not ready to answer,—Schweninger; it is indispensable and will be always continued,—Lassar; there are cases where the hypodermic method cannot be replaced by any other; for this reason it must be retained in the treatment of syphilis, otherwise syphilis may on an average just as well be treated by other methods,—Zarewicz; in some cases the hypodermic method is extraordinarily advantageous for patients and physicians, but as regular treatment I prefer inunctions,—Havas; I do not say that the other methods are not used, but I think that we could not be any more without it,—Schwimmer; I believe that we ought not to give up any of the heretofore used methods, with the exception of fumigation,—Zeissl; in some cases this method will always be made use of,—Kohn; I do not use the injections exclusively; I differentiate the two already-mentioned methods of mercurial treatment:

A, energetic (1) inunctions and (2) intramuscular injections with insoluble salts, equal in action; B, mild (1) internal medication, (2) hypodermic medication with soluble salts; these also equal each other in effect. With us in Austria the inunction treatment is still very much practised. I use it also when energetic action of mercury is indicated, and I make intramuscular injections when inunctions cannot be made either by inclination to mercurial eczema or for social reasons. No antisyphilitic treatment can be so easily kept secret as the injections. When I consider a mild mercurial effect indicated, then I use the protiodide, the tannate, or the sublimate internally; where gastritis and enteritis contraindicate the internal treatment, I use hypodermic injections of sublimate,—Finger; yes, for relapses in cases not grave,—Riehl; with limitations, which I pointed out, the continuation of the method is to be recommended,—Lang.

From the above answers it can be readily seen that the large majority of my correspondents are unqualifiedly in favor of continuing the method; while some place restriction on its use, or qualify indications for it, they, nevertheless, see and recommend a large sphere for its employment; while two of the correspondents do not answer the question and four give only an indefinite answer, thirty of the thirty-six favor the continuance of the method.

This brings us to the tenth and last question, "Do you consider it has superseded to a great extent the administration of mercury by the mouth in the treatment of syphilis?"

The answers to this question are important, especially to verify or otherwise stamp as unwarranted the statement that I have made in my previous paper, "That in the principal medical centres of Continental Europe little or no mercury is given internally any more."

The answers to this question are: Yes,—Kaposi, Neumann, Mraceck, Zeissl, Pick, Lassar, Schweninger, Doutrelepont, Barduzzi; it has with those who have given it a systematic trial,—Wilson; no,—Cruyl, McCall Anderson; no, I do not believe it, as the facility of the internal use of mercury in contradistinction to the inunctions and injections will always bring physicians and patients back to the internal use, which, with proper precautions, has scarcely any disadvantageous consequences,—Von Ins; I do not think that the hypodermic method is intended to disparage that of stomachal ingestion,—Poncet; no answer,—Leloir; I hold that the method of administration by the mouth is inferior to the hypodermic injections,—Ferrari; I cannot see any contraindications to the hypodermic methods other than to any other method of mercurial medication,—Scarenzio; the regular administration of mercury by the mouth, used for such a long time, merits in general the preference when the patients follow the rules laid down for it,—Gamberini; I prefer the method in grave cases and when I think it would not be done justly and regularly by other methods,—Breda; I believe not,—Pellizzari; it has superseded the administration of mercury by the mouth; we only employ the latter treatment in milder relapses of syphilis,—Noman; I think this method preferable to all others,—Brouen; the ingestion by the mouth I consider as perfectly superfluous,—Polotebnoff; the hypodermic method, by its promptitude and exactitude, surpasses by far the method by the mouth; the symptoms, for instance, which disappear in a month during oral ingestion, disappear in a week by the hypodermic treatment,—Stoukovenkoff; yes, because the internal treatment, either immediately or after some time, mostly deranges the stomach and thereby disables it from taking up further quantities of the remedy,—Smirnoff; administration of mercury by the mouth I think the most unreasonable and inexact thing in the world; nobody ever knows how much will be absorbed; finally, it very often produces irritation of the stomach and intestinal tract,—Kopp; I have ordered the internal use only seldom,—Caspar; the hypodermic method, in regard to its intensity, may be said to stand between internal administration and inunctions; a special preference over the oral ingestion it has not,—Zarewicz; I am a decided opponent of the indiscriminate mercurialization, not alone because it is superfluous, but because it is also disadvantageous to the organism, producing neurasthenia, and because it only acts on manifest syphilis symptoms,—Havas; I regard the value of this method in every case more efficacious than the internal administration of mercury,—Schwimmer; yes, because the administration of mercury by the mouth is insufficient,—Janovsky; the internal use of mercury will be permissible only, then, when we cannot reach our objective by injections,—Kohn; it has,—Hebra; I do not think that we ought to monopolize one method of treatment; our object in the therapy of syphilis is to get mercury in sufficient quantity into the organism; it depends entirely on the special case which way to choose to reach this end in the safest manner,—Finger; the treatment with mercury by the mouth is also good sometimes,—Riehl; certainly,—Lang.

In answer to this question, I have elicited twenty-three unqualified statements that the hypodermic method, in the opinion of my correspondents, had superseded the administration even of mercury by the mouth; some of them deriding the latter method and claiming positive disadvantages for it. Five of my correspondents give an indefinite answer from which no conclusion can be arrived at on this point, while seven out of the thirty-six do not consider that the hypodermic method has superseded that of oral ingestion; in many cases admitting, however, the value of the hypodermic method.

The general remarks made by twenty-two of my correspondents are more on the general treatment of syphilis, and so little to the objective point of this paper that I do not feel justified in prolonging its already vast scope by their introduction. In them many state their preference for inunction, which seems, especially with the Germans and Austrians, a general method of election. The courteous and lengthy communications of some of my honored correspondents well merit their reproduction as a consensus of opinion on syphilis and its treatment generally. It has been, however, my aim to present only such opinions as were directly on the injection treatment; and I must therefore reluctantly decline to introduce subject-matter foreign to my purpose.

When we analyze my communications geographically, it will be found that we have fourteen from Austria, six from Germany, four from Russia, one from Holland, seven from Italy, two from France, two from Switzerland, five from England, two from Belgium, and one from this country.

It seems to me that opinions on the subject of this method of treatment are divided somewhat by geographical lines. Thus, it will be found that among the five English correspondents only one endorses the treatment. This we can attribute no doubt to the teaching of Hutchinson and its influence. From France my two correspondents seem not greatly impressed with the utility and scope of this method; as much may be said of the two correspondents from Belgium and the same number from Switzerland. The methods of Sca-renzio are still adhered to by the Italian school, while the practice of Russia and Holland seems to lean towards the German and Austrian teachings. Five out of the six German correspondents appear as adherents of the hypodermic method, while of the fourteen Austrian correspondents, probably all but two may be said to be warm supporters of the injection treatment.

I could quote a number of Americans who have employed this treatment for some time, and have both in literature and privately expressed their favorable impressions of its value. I found it expedient to introduce but one of its supporters, because he was, perhaps, the earliest author in this country on the subject of calomel injections, and because by his position as a teacher and practitioner he can be said to carry more weight than others who followed in his footsteps, and whom I have, therefore, not felt called upon to cite here. It must be remembered that I have thrown out the testimony of all who have not been able to state their experience with this method. It should also be remembered that of thirty-two correspondents of Dr. White, in his admirable paper on this subject read before this Society, only seventeen have had experience with the method, of which fourteen were opposed to it and three spoke in its favor, while fifteen expressed themselves as having had little or no experience with it. Condemnation without trial or judging *a priori* without experience can hardly be assumed as a fair means to arrive at medical opinions. There is no doubt that the hypodermic method is not all or everything that is needed in the treatment of syphilis, but I think that it is one of the methods of treatment for syphilis which has a wide application and a vast field of usefulness.

The principal objection raised against it, that it cannot be used continuously for a number of years, it shares in common with probably the most efficacious method of medication known in the therapy of syphilis,—*i.e.*, the mercurial inunctions. That after its use there may appear again and again relapses is as true as that they may do so after inunctions. In these it is necessary to repeat the series of injections as well as it becomes necessary to repeat the treatment by inunction from time to time with the reappearance of the lesions which make manifest the recrudescence of the disease. With every series the lesions appear less severe and the necessity for mercurialization less marked. If, with the non-appearance of the symptoms within a period of years, the necessity for mercurial treatment ceases, the assumption for a cure of syphilis by this method is as much justified as by a continuous oral ingestion of mercurials during that time. That there are quite a number of cases in which there is no reappearance of syphilitic lesions after the first or possibly the second series of injections, especially if the series has extended over a sufficiently long period of time, and that the necessity for further medication then ceases, is a fact

quite as obvious as that reported and observed by many, that syphilis will disappear often even without treatment, or under the influence of proper hygienic, dietetic, and sanitary conditions only.

If I am justified in drawing any conclusions from the answers to my questions, I would sum up as follows:

1. The hypodermic use of mercurials is largely employed in the treatment of syphilis in Continental Europe, with probably the exception of France.

2. While all of the many preparations of mercury find employment in this treatment, the one by preference is sublimate, next in order calomel, then salicylate, followed by yellow oxide, also sozoiodolate and gray oil; the others seem to be favored by individual adherents only.

3. That there appears to be a decided preference for the soluble over the insoluble preparations.

4. As to rapidity of action and permanence in effect, calomel seems to hold the foremost place.

5. There seems to be no doubt, judging from my investigation, that in that part of the European continent mentioned the hypodermic method (I include here also the intramuscular injections) is being freely employed as a general treatment for syphilis.

6. The period of time through which the hypodermic treatment is being continued in the average cases cannot be said to be strictly limited, but should be until all symptoms have completely disappeared.

7. The opinions of my correspondents on the disadvantages and untoward effects of this treatment would show that they are not nearly as frequent or as serious as has been supposed, and that they are by far more frequent with the insoluble than the soluble preparations. It seems to be the general opinion of a majority of my correspondents that serious complications may be avoided with proper care and cleanliness. The testimony of a few individual ones seems in this respect greatly at variance with the experience of a large majority. Accidents such as may arise in the course of all methods of mercurialization cannot, of course, be specially attributed to the hypodermic treatment.

8. The question as to the firm basis on which the hypodermic method is established is answered almost universally in the affirmative.

9. The consensus of opinions of my correspondents as to whether the hypodermic method should be continued or abandoned as a regular treatment for syphilis tends towards the almost

universally expressed desirability of its continuation, although in the minds of a small minority with certain limitations or restrictions.

10. There seems no doubt, from the nature of the responses I have received and quoted above, that I was justified in claiming some time ago "that in the principal medical centres of Continental Europe little or almost no mercury is given internally any more in the treatment of syphilis," and that in the countries mentioned hypodermic medication has superseded oral ingestion of mercurials to a great extent.

*A CLINICAL INVESTIGATION TO DETERMINE THE VALUE OF CORROSIVE SUBLIMATE AND THE GRAY OIL ADMINISTERED HYPODERMICALLY IN THE TREATMENT OF SYPHILIS.*

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THE experience of many investigators is adverse to the employment of the insoluble salts of mercury hypodermically.

The general belief is that the use of these salts results in great pain and produces callosities, abscesses, and stomatitis. Our experience corresponding with those of other observers, we some time since determined to enter upon a clinical investigation to ascertain, if possible, the value of both corrosive sublimate and the gray oil in the hypodermic treatment of syphilis.

These remedies, it is believed, we have fairly and fully tried. The result is here recounted, that all may judge of the value of our observations.

The first experiments were made with a view to ascertain whether the disease could be aborted after the method suggested by Bronson, who has recently advised hypodermic injections of mercurials into the chancre and the indurated lymphatic glands in its neighborhood. His views are based upon the theory that the initial lesion is the storehouse of the syphilitic poison, or the point during the primary stage from whence the disease is disseminated; and that the mercurial being brought into direct contact with the micro-organism which causes syphilis, necessarily exerts its germicidal influence, destroys it, and thus aborts the disease.

Ten cases were selected and placed under treatment. A quarter of a grain of corrosive

sublimate was administered daily to each hypodermically until thirty injections had been made. It was possible to insert but three or four injections at the site of the chancre; the remainder were introduced into the indurated glands about the groin. These injections were attended with slight pain and more or less oedema of the penis.

A suppurating bubo made its appearance in but one instance. Whether or not this was caused by the treatment could not be determined, as a certain proportion of syphilitic cases will always be accompanied by a complication of the kind.

In nine of the cases the symptoms were delayed, and did not appear for a period varying from between two and nine months after all treatment had been discontinued. The manifestations were very mild, taking on the form principally of mucous patches, slight alopecia, and macular eruptions. In the tenth case, although over one year has elapsed since the disease was contracted, no untoward symptoms have appeared.

With this patient the doubt as to a correct diagnosis must be taken into account, for the origin of the disorder might not have been syphilitic.

As far as can be determined, this method of treatment simply delays the appearance and mitigates the symptoms of the disease, rendering it difficult to give a correct prognosis, and leaving it uncertain in the mind of the practitioner how long treatment should be continued.

Sixty cases of secondary syphilis were selected for the purpose of investigation and to determine as far as practicable the value of this method of routine treatment. The quantity of corrosive sublimate employed was a quarter of a grain to each injection. Each patient received thirty injections, making, in all, eighteen hundred hypodermic insertions.

Fifteen patients were inmates of the Philadelphia Hospital, thirty of the Jefferson Medical College Hospital, and fifteen were selected from private practice.

The cases that were treated at the Philadelphia Hospital quitted the establishment within a month and could not be followed; of those treated at the Jefferson Hospital, nine have not been heard from since being discharged; of the remaining twenty-one still under observation, eleven have relapsed, and have been placed on other forms of treatment. Of the fifteen private cases, four have not been heard from since they have been discharged; and of the eleven remaining cases, three have relapsed, and eight up to the present time remain in good health.

The longest period that has elapsed since the treatment of the last case is six months. Most of these relapses occurred within from four to eight weeks after the injections were discontinued. None of the patients made any special complaint of pain produced by the injection; in no instance was an abscess formed, nor was there induration about the seat of the injection. When relapses took place, several of the patients were desirous of returning to the use of the hypodermics. In all the rapid disappearance of the symptoms was remarkable. In most cases, as a rule, constipation prevailed, and the employment of salines became necessary. In no instance was salivation produced.

So that in sixty patients on whom the hypodermic method had been employed, on each of whom thirty injections were administered, twenty-eight disappeared and are unaccounted for; the remaining thirty-two have been carefully watched.

Of this number, fifteen relapsed within eight weeks after treatment had been discontinued, leaving seventeen free from disease. The longest period that has passed since any of these has received treatment is ten months.

The advocates of this method advise that, when recurrence takes place, injections be resumed, reducing the dose, however, to one-sixth of a grain of corrosive sublimate, returning to the mercurial whenever the disease reappears, and reducing the amount of the drug on each occasion.

This rule was not followed in the relapsing cases here referred to after thirty injections had been used without good results. It appeared to us merely a symptomatic method of treating the disease, which is generally fraught with so much danger, tertiary lesions usually following.

The supporters of the routine method of treatment by hypodermic injections of corrosive sublimate agree that about forty per cent. of the cases relapse. It will be observed that with us well-nigh fifty per cent. recurred, and that the disease returned in a remarkably short time after treatment had been discontinued, the longest period of exemption being eight weeks.

In order to determine the value of the hypodermic injections, when used in conjunction with other methods, nineteen cases were submitted to treatment. In five of these the lesions were situated upon the face, and were a source of great annoyance; hypodermics of corrosive sublimate were administered, when the eruptions disappeared with remarkable rapidity. Mercury was then administered by the mouth.

In fourteen cases of severe syphilitic poison a systematic course of treatment was pursued. For a period of four months the mercurial was administered by the mouth, and instead of making use of inunctions of mercury for two weeks, which is the usual method, injections of a sixth of a grain of bichloride were given daily for that length of time, when these were discontinued and the administration of the drug by the mouth resumed.

In the case of a married man who contracted syphilis in the absence of his wife during the summer, and who expected her return within three weeks, and who was most anxious that no symptom of the disease should be present on her return home, eighteen hypodermics were administered, with the result that at the end of twenty-one days he was perfectly free from all manifestations.

In two cases of iritis fifteen injections of corrosive sublimate were administered in each case, the patients taking in conjunction ten grains of the iodide of potassium three times daily, when the symptoms rapidly disappeared.

In a rare case of gumma of the conjunctiva, occurring in the clinical service of Professor Thompson, eight hypodermics caused its disappearance, when treatment was continued by the mouth.

In four cases of relapsing syphilis hypodermics of gray oil were given once a week for six weeks, and although nearly a year has elapsed since treatment has been discontinued, these patients, who were constantly suffering from manifestations of the disease, have remained free from any symptoms. With these cases all other methods heretofore employed had failed.

In one case of gumma of the palate the pain produced by the corrosive sublimate was so severe that the injections had to be discontinued after two administrations, when other means were resorted to.

In three women who were inmates of the venereal ward of the Philadelphia Hospital, and who had been on a continuous course of treatment by the mouth before the hypodermic method was employed, slight ulceration of the gums was produced, and the injections were necessarily discontinued.

In one case of gumma of the brain fifteen hypodermics of the gray oil, in conjunction with small doses of iodide of potassium, effected a rapid cure.

In one case of syphilitic insanity six hypodermics of gray oil were given with marked improvement.

In two cases of syphilitic locomotor ataxy the staggering gait, the great pain, and the vertigo

have almost entirely disappeared, and there has been a progressive increase of weight and strength; both patients, who were unable to work when first placed under treatment, have returned to their respective occupations. The gray oil was likewise employed in twelve cases of obstinate skin-eruptions which refused to yield to other methods of treatment.

In eighteen cases of secondary syphilis, which had shown constant tendency to relapse during a course of two years' treatment, and in one case of malignant syphilis, marked improvement was manifested by the treatment here recommended.

The following table exhibits the number and conditions of the cases and the number of hypodermics of corrosive sublimate administered in each instance:

No. of Cases.	Conditions.	No. of Hypodermics.
10	Attempt to abort the disease .....	300
60	Routine treatment .....	1800
6	Obstinate skin-eruptions .....	180
5	Eruptions on the face .....	110
14	Conjunction with systematic treatment .....	196
1	Married man .....	18
2	Iritis .....	30
1	Gumma of conjunctiva .....	8
99		2642

A second table is submitted, exhibiting the conditions of the patients and the number of hypodermics of gray oil administered in a given number of cases:

No. of Cases.	Conditions.	No. of Hypodermics.
2	Gumma of the brain .....	12
1	Insanity .....	6
2	Locomotor ataxy .....	12
4	Relapsing syphilis .....	24
12	Obstinate skin-eruptions .....	72
18	Termination two years' course treatment ....	108
1	Malignant syphilis .....	6
40		240

From a careful study of the clinical cases just cited the following deductions may be drawn:

1. Hypodermic medication will not abort the disease.
2. That it should not be employed as a routine method of treatment.

3. That the production of abscesses or of pyalism by this method must be very rare.

4. Injections of corrosive sublimate give rise to trifling pain, but not to callosities.

5. The gray oil gives rise to slight pain and always produces induration.

6. The gray oil employed in this manner is more dangerous than corrosive sublimate, and when administered the patient should be carefully watched.

7. In suitable cases, when properly employed, these remedies are among the strongest weapons possessed by the profession wherewith to fight the disease.

8. When employing corrosive sublimate, a quarter of a grain should be administered with each injection, provided the patient has not previously been submitted to treatment; if mercurials have already been employed by the mouth, the quantity employed should be one-sixth of a grain.

9. Hypodermic injections of corrosive sublimate are of undoubted value when the lesions appear upon the face and a rapid impression is desired; likewise when some important structure, as the eye or brain, is attacked.

Mercurials may be employed hypodermically as a substitute for inunctions in a systematic course of treatment.

They may be used with advantage when time is an object.

In cases of relapsing syphilis where other methods have failed, injections have completely controlled the outbreak.

In syphilitic diseases of the nervous system their use generally produces most satisfactory results.

They are frequently beneficial in those forms of eruption that have proved rebellious to other treatment.

10. It is well to employ the gray oil in cases of severe secondary syphilis where there is evidence of a tendency to relapse during the course of a two years' treatment, winding up with a weekly administration of a hypodermic for the space of six weeks. The patient should then be placed upon small doses of iodide of potassium for the period of three months. This treatment is valuable in the obstinate relapsing tertiary variety of the disease, and has proved more potent in our hands than any other method. In nervous syphilis it is far superior to inunctions.

*Finally.*—This mode of treatment is unhesitatingly recommended to the profession, under the conditions already laid down, as the most reliable and active that can be employed.

#### ASEPSIS IN OBSTETRICS.

In a short paper in the *Brooklyn Medical Journal* of April, 1894, GORDON gives the following directions as those employed by himself in obstetrical practice. He instructs the patient to have ready two wash-bowls and a hand-brush for each, a dozen pieces of boiled cheese-cloth for wash-cloths, and the following prescription for lubricating the hand:

R Hydrarg. bichl., gr. i;  
Glycerin, ℥ii. M.

Also a bottle of bichloride-of-mercury tablets.

When labor begins have the bowels emptied by an enema and the external genitals thoroughly cleansed with soap and water. Before a digital examination the parts are bathed by the nurse with a bichloride-of-mercury solution (1 to 2000), and the hands and arms of the examiner thoroughly scrubbed with soap and hot water, rinsed, and again washed in a 1 to 2000 bichloride-of-mercury solution, the fingers lubricated with the antiseptic glycerin solution, the hand to be immersed in the bichloride solution before each succeeding examination, which are as few as possible. At the close of the third stage the external genitals are cleansed by the nurse (whose hands have been rendered aseptic) with an antiseptic solution, and a napkin applied, which has been wrung out of a bichloride-of-mercury solution and dried.

Should catheterization become necessary, the same antiseptic precautions are observed. No douches are used after normal labor. In instrumental cases the instruments are first immersed in boiling water and then in a five-per-cent. carbolic-acid solution. After delivery, a hot carbolized douche is administered.

#### STERILIZATION OF HYPODERMIC SOLUTIONS.

D. MARINUCCI has found large numbers of living germs, some of a harmful nature, in freshly-prepared hypodermic solutions of strychnine sulphate, morphine hydrochlorate, atropine sulphate, eserine, etc. Sterilization by heat did not affect the therapeutic value of strychnine and quinine, but partly checked the action of morphine and atropine. Eserine and atropine solutions are said to be best prepared with a solution of corrosive sublimate (1 in 1000), which renders them aseptic without modifying their therapeutic properties. It is suggested that all such solutions should be renewed every fourteen days.—*Druggist's Circular and Chemical Gazette*, March, 1894.



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## Leading Articles.

### THE TREATMENT OF ENLARGED CERVICAL GLANDS.

LEAVING out of consideration malignant disease and general lymphadenoid enlargement associated with profound blood-changes, enlarged cervical glands as they appear to the clinician can generally be classed as irritative or tubercular. These enlarged glands are commonly found in the neck, the axilla, or the groin, by far the large majority being placed in the cervical region.

They are more frequent in children than in adults. The simple irritative form is characterized by a somewhat rapid course, terminating speedily in either resolution or suppuration. The tubercular form is slow in course, progressive, prone to involve an entire chain or, indeed, all the glands of the neck, and usually terminates in caseous degeneration of the deeper

glands and in softening and ulceration of the skin overlying those more superficially placed. After the process has developed thus far, the tubercular matter may become encapsulated, or may be spontaneously extruded; the patient may definitely recover. Frequently, however, the disease passes down to the mediastinal glands, becomes wide spread, and death ensues. The entrance-point of infection is usually the mucous membrane of the nose, the mouth, or the pharynx.

The frequency of cervical tubercular adenitis makes the question of therapeutics one of great importance. In the discussion on this subject in the Section on Diseases of Children, at the annual meeting of the British Medical Association, Teale took the ground "that (*British Medical Journal*, No. 1717, 1893) whenever septic material is contained in the system, we rest not until it is expelled and its burrows are laid open and disinfected. In doing this the surgeon must make it an artistic study how to effect his purpose with the smallest possible amount of blemish. The ugly scars and unseemly depressions, once so familiar in scrofulous necks, should be deemed an opprobrium of surgery; while to delay operation until the skin is thin, red, and ready to break down, or has already given way, should be looked upon as mischievous trifling."

He expresses the hope that the time is not far distant when the absolute inutility of painting the skin, in the hope of influencing a caseating gland deeply seated beneath muscle and fascia, will be fully realized by the professional mind, and lays down the following propositions for the guidance of the surgeon in the operative treatment of these cases.

1. Whenever fluid—that is, pus—can be detected in connection with a diseased lymphatic gland, the operation should be done before the skin becomes red and thin.

2. When the diseased gland is subcutaneous,—that is, not beneath the deep fascia or muscle, and has been completely removed,—the least scar will result if neither stitches nor drainage-tube be used, especially if it be possible to leave the wound uncovered by dressing and exposed to the air, so that the edges may be drawn and glued together by drying lymph.

3. If the diseased gland is beneath the muscle or muscular fascia, then a drainage-tube must be used, and the edges of the wound must be united by suture. The best drainage-tube is the gilt spiral wire, especially as it may have to remain from two to eight or ten weeks, according to the depth of the wound or the completeness of the removal of the gland.

4. Where many glands have to be removed, it is better to remove them through a series of small incisions and thereby avoid very extensive ones.

Considering the subject from a pathological point of view, he holds that all sinuses and suppurating cavities should be thoroughly cleansed by means of scraper and lint, so as to leave a fresh surface free from granulation or decayed or decaying tissue, and that a drainage exit should be maintained until all the deep parts are healed.

It is essential to know and to bear in mind that the visible abscess, which has often been called and treated as a suppurating gland, is frequently but a subcutaneous reservoir of pus, the source of which (a degenerate gland) is not subcutaneous but superficial,—that is, under the deep cervical fascia, and often submuscular, under the sterno-mastoid, the communication between the two being a small opening in the deep fascia just large enough to admit a probe or director. This opening may easily be overlooked, and is not always easily found even when searched for, but it must be found, or the operation will be a failure.

No such abscess should be opened without putting the patient under ether and being prepared for all necessary means of eradicating the diseased gland. If, during the extirpation or evisceration of the gland, the finger detects in the wall of the capsular cavity the slight convex bulging of a contiguous gland, this should be pricked through the wall of the cavity, and so reached and extirpated or eviscerated.

As to caseous glands when a broken-down gland is encountered which is proved to have undergone caseous degeneration, it is safe to infer that any other enlarged glands then present or subsequently appearing are becoming caseous also. Therefore such glands should be removed as soon as the surgeon is convinced that such enlargement is persistent and not transitory, without waiting for evidence of fluctuation or pus.

As to simple glandular enlargement, Teale expresses no opinion in regard to operation. The instruments which have proved of most service to him are the special director devised by himself; Bigelow's dilator, for widening deep sinuses and avoiding the use of the knife in dangerous regions; Lister's scraper, which is a better form of instrument than Volkmann's spoon; a scalpel of proper lancet shape.

In regard to the ultimate effect upon the health, Teale holds that it is possible in most cases to get to the bottom of the trouble in one or two operations; that in most instances dis-

ease of the cervical glands, whatever its origin, is practically a local disease and needs to be dealt with by local measures, and that it is but rarely the expression of a general constitutional defect.

W. K. Treves states that he has operated on several hundred cases without a single death. He states that in operating the chief points are to avoid wounding or tearing the affected glands,—to keep, in dissecting, close to the surface of the gland, in order to avoid hemorrhage, and to use transverse incisions. Drainage-tubes are discarded, the wounds being closed and covered in by a pressure bandage.

Godlee, as a routine practice, advises cutting out of the glands in all cases excepting where there is reason to believe that the mischief has extended beyond the limits which can be marked by the knife, and those in which the glands have suppurated and become diffused. In the latter class of cases Volkmann's spoon is employed. He advocates small incisions, and never found it necessary to divide the sterno-mastoid. He prefers a free incision and complete removal. Drainage-tubes are used. He employs a blunt periosteum elevator in digging out glands from inaccessible parts. He has never seen general tuberculosis follow the scraping out of glands, though he has several times seen it follow the use of the instrument in other tuberculous conditions. He never uses a drainage-tube when he can get a clean-cut wound. He has lost no case from operation.

Marsh stated that the cases best suited for the proceeding were those in which glands were of the same size and of long duration, and had not yet suppurated. He advocated a free incision and complete removal. Drainage-tubes were used only when suppuration had occurred and where there was a deep and ramified cavity. Careful dissection is to be preferred to scraping.

Cummins referred to two cases in which extensive operations in the neck and axilla had been followed by acute phthisis. This unfortunate result he believed to be due to opening up of collections of tuberculous material and large blood-vessels during the operation. He believes in early excision of the gland, if possible, even if suppuration and adhesion of the gland to the surrounding tissue has taken place, in preference to the possibly incomplete removal of half-softened tissue by means of the scoop.

Medicinal treatment—*i.e.*, syrup of the iodide of iron—he considers harmful, but has seen benefit follow the prolonged use of the sulphide of calcium.

Thomas advocates the chlorate of potassium in 3- to 10-grain doses, and still more highly arsenic. He records one case in which he divided the sterno-mastoid and then drew up some glands from the thorax. The wound healed favorably, but the patient died fifteen months after from extension of the disease to the bronchial glands.

Milburn cautioned against too early recourse to operation. Removal in some instances, he said, had a good effect; in others it seemed to develop latent diseased conditions. Thus, in one case of constant and intractable corneal ulceration and opacities which had resisted all modes of treatment, removal of a suddenly-enlarged cervical gland was followed by clearing up of all the opacities and restoration of the child to apparently perfect health.

Noble Smith advocated a free opening and closure of the wound without using a drainage-tube. He held that section of the sterno-mastoid is followed by no ill effect.

Black called attention to the necessity of paying proper attention to the mucous membrane of the throat and nose in these cases.

It is worthy of note that in all this discussion no mention has been made of parenchymatous injections and treatment which have in recent years been widely advocated by those most experienced in dealing with the local forms of tuberculosis. Though it is undoubtedly true that early operation and complete removal by the knife offer the best chance of radical cure and with the least resulting deformity, it is, unfortunately, the case that many of these patients never present themselves until the disease has extended so far that complete removal by surgical operation is impracticable. In such cases the parenchymatous injections hold out a fair prospect of cure. Of these, the favorite seems to be a ten-per-cent. iodoform emulsion in glycerin. By means of a hypodermic syringe this mixture should be driven directly into the centre of infiltrated masses. The injection should be made at many points, and particular attention should be paid to forcing the medication into the periphery of the infiltrate. Twenty to 30 minims may be employed at each treatment, and the treatments may be repeated every third or fifth day. There is little danger of toxic symptoms. The ethereal solution of iodoform, at one time warmly advocated, is extremely irritating, causes great pain, and has produced death from iodoform-poisoning in a number of instances. French authors warmly commend solution of chloride of zinc. This is Professor Lannelongue's sclerogenic method; 3 to 4 drops of a 1 to 40 lotion are driven into various points of the en-

largement, the injection being repeated at each visit as often as the patient's tolerance of pain allows. This treatment is repeated every seven to ten days, and is finally terminated by injections 1 to 20 in strength.

Kanasz commends essence of cloves dissolved in olive oil in ten-per-cent. solution. When there is pus, this is first withdrawn. The treatment is repeated once in seven days. Indeed, when the subject of parenchymatous injections is considered, there are found so many drugs which are alleged to bring about useful results that it is hard to choose from them.

The internal treatment in these cases should consist in the use of cod-liver oil, iron, and a properly-regulated diet. Medicine administered for the purpose of acting directly upon the enlarged glands seems to be of little avail, though of the drugs used, syrup of the iodide of iron, in doses of 5 to 10 drops three times daily; iodide of potassium, in doses of 5 to 10 drops three times daily; sulphide of calcium,  $\frac{1}{2}$  grain, four times a day, are warmly commended. It is worthy of note that in operating upon deep glands which have already softened, drainage is unnecessary, since the ordinary micro-organisms of suppuration are entirely absent, and the inoculation of the pus by nutrient gelatin gives negative results.

#### *THE TREATMENT OF CERTAIN TYPES OF CONJUNCTIVAL HYPERÆMIA.*

IN a recent number of the THERAPEUTIC GAZETTE (October 16, 1893) we called attention to certain mild conjunctival inflammations and their local treatment, laying particular stress upon the importance of avoiding active astringents—as alum, sulphate of zinc, and particularly nitrate of silver—in the management of the types then described. When the conjunctival affection assumed a hyperæmic type, abnormal secretion being practically absent, and the congestion largely confined to the bulbar conjunctiva, the local measures recommended were the Koenigstein douche and washing the eyes frequently with tepid water and Castile soap. It was presupposed that the cause of the hyperæmia, so far as ascertainable, had been removed,—namely, local irritants, lachrymal obstruction, diseases of the naso-pharynx, various states of depraved health, vaso-motor disturbance, and eye-strain in the widest acceptance of the term.

It is the purpose of the present note to call attention to some types of hyperæmia more or

less characteristic of these states of depraved health and vaso-motor disturbance, many of which are associated with a corresponding hyperæmia, irritation, or positive inflammation of the naso-pharynx.

Perhaps the most interesting of these forms of conjunctival hyperæmia, several times referred to in the pages of the GAZETTE, is the one seen with gout, analogous in its manifestations to the "hot eye" described by Mr. Hutchinson,—a condition which will not subside under local treatment, and which presents somewhat the following train of symptoms: well-marked bulbar injection, the posterior conjunctival vessels being distinctly tortuous and filled with darker blood than is normal; practically no abnormal secretion, save perhaps a little frothy mucus at the inner and outer angles; no dread of light, but an annoying sense of heat, amounting sometimes to positive burning, present whether the eyes are used or not, but aggravated during close work. These symptoms are usually worse in the first hour or two of the morning, decrease during the day, but return soon after the evening meal, or in the presence of artificial light. There is nothing characteristic, and the hyperæmia resembles that which might occur from any of its well-known causes, the difference being that under anti-gout treatment, both medicinal and that which regulates the diet, more particularly the latter, the redness disappears. Sometimes the congestion remains, but its most troublesome symptom—the sense of heat—subsides. The practical deduction is the importance of ascertaining the probable relation of gout to any form of hyperæmia that persists in spite of the ordinary treatment. It should be remembered, even in these constitutional types, that all local measures which tend to relieve congestion are indicated, as well as the correction of refractive errors and the removal of naso-pharyngeal irritations.

Mr. Berry, in his excellent text-book, refers to a recurring form of hyperæmia of the conjunctiva, acute in character, which he suggests is due to some vaso-motor disturbance. This interesting type is seen in patients who exhibit abnormal flushings elsewhere in the body,—for example, spots of capillary injection in the face and burning and redness of the ears. Generally the cause resides in some condition dependent, as Mr. Berry says, on the lack of vaso-motor control, or the affection is associated with functional circulatory disturbances,—such, for example, as occur under the influence of the excessive use of tobacco. The

plain indication for the treatment is the removal of the cause and the exhibition of vaso-motor tonics, notably the sulphate of strychnine or very large doses of the tincture of nuxvomica. Ergot, with or without small doses of the bromides, occasionally acts well. Again, it must be remembered that these constitutional measures do not exclude local means; but when the two are combined, excellent results will usually follow.

Finally, we come to the form of hyperæmia of the conjunctiva, well known to all practitioners of medicine, both special and general, which depends upon torpidity of the liver, or, in general, to disturbances of the function of this organ. This is a characteristic bloodshot, watery eye, utterly rebellious to local treatment, and improving only when the hepatic functions are restored to normal. It is a waste of time to order for these patients collyria of various types, or even glasses, in the hope of relieving the congestion, if its prime cause is not recognized. Regulation of the habits of the patient, especially as to drink and food, calomel, podophyllin, and nitro-muriatic acid, each in its proper place, are often more indicated than antiseptic lotions, douches, and ordinary astringents.

Conjunctival hyperæmia is a troublesome complaint and worthy of thorough investigation, especially as it may be one of the symptoms of a general condition.

#### "CEREBRINE" AGAIN.

MANY of the readers of the THERAPEUTIC GAZETTE remember that we called attention in the GAZETTE of August 15, 1893, to the character of the preparation known as "cerebrine," introduced into medicine by Dr. William A. Hammond, of Washington. Shortly after there appeared in the *Journal of the American Medical Association* of August 26, 1893, a letter by Professor Brower, of Chicago, accompanied by another from the well-known chemist, Delafontaine, in which good physiological and chemical reasons were advanced for believing that the "cerebrine" obtainable in the market at that time had been sophisticated with no less powerful a remedy than nitroglycerin. About the same time the studies of Dr. Stockwell, of Detroit, also appeared, indicating that the first preparations of "cerebrine" which were placed upon the market by the Columbia Chemical Company, under Dr. Hammond's endorsement, were devoid of this substance, and it is therefore inferable that

sophistication was resorted to both to increase the activity of an otherwise inert substance and at the same time to produce this fortification by means of a substance which was not readily detected upon analysis. Since then a number of reports from other physicians have appeared, the consensus of opinion being that "cerebrine" in itself was unworthy of consideration by the medical profession as a remedy.

Finally, we have just received a letter on the subject written by Professor Albert B. Prescott, of the University of Michigan, at Ann Arbor, who is so well known to physicians and pharmacists through his work on the Committee of Revision of the United States Pharmacopœia, and to chemists because of his high rank in his chosen profession, which will be found under the head of "Correspondence."

It seems evident, therefore, that the position which we took in regard to the nature of this preparation last August was correct, and that the theoretical deductions naturally made at that time have been confirmed by the most competent of investigators. Fortunately, the facts were discovered ere the profession in general suffered from its too ready belief in the therapeutic recommendations of the originator of this now widely and popularly advertised product. This warning has forced the placing of the substance on the general market, it being widely advertised in the daily papers and recommended for popular use in association with Dr. Hammond's name, as may be seen from the following clipping from the New York *Sun* of March 27, 1894:

## THE ANIMAL EXTRACTS

Prepared according to the formula of

**DR. WM. A. HAMMOND,**

In his laboratory at Washington, D. C.

**CEREBRINE**, from the brain, for diseases of the brain and nervous system.

**MEDULLINE**, from the spinal cord, for diseases of the cord. (Locomotor-Ataxia, etc.)

**CARDINE**, from the heart, for diseases of the heart.

**TESTINE**, from the testes, for diseases of the testes. (Atrophy of the organs, sterility, etc.)

**OVARINE**, from the ovaries, for diseases of the ovaries.

**MUSCULINE**, thyroline, etc.

Dose, Five Drops. Price (3 drachms), \$2.50.

The physiological effects produced by a single dose of Cerebrine are acceleration of the pulse with feeling of fulness and distention in the head, exhilaration of spirits, increased urinary excretion, augmentation of the expulsive force of the bladder and peristaltic action of the intestines, increase in muscular strength and endurance, increased power of vision in elderly people, and increased appetite and digestive power.

Where local druggists are not supplied with the Hammond Animal Extracts they will be mailed, together with all existing literature on the subject, on receipt of price, by

**THE COLUMBIA CHEMICAL CO.,**  
Washington, D. C.

For sale by J. Milhau's Son, 183 Broadway; wholesale, John H. Francis, 83 John St.

## THE TREATMENT OF SYPHILIS BY HYPODERMIC INJECTIONS.\*

AS many of the readers of the THERAPEUTIC GAZETTE are aware, the subject of this editorial has been warmly discussed by syphilographers in this country and abroad during the past few years. Perhaps the most able summary of the treatment of this wide-spread disease by this means is that which can be found in a recent article on syphilis by Dr. R. W. Taylor, in the "System of Therapeutics;" but we notice that, although his paper was in many respects decisive, that wide differences of opinion still exist in regard to the value and indications governing the use of injections of mercury in specific disease.

During the past year a spirited discussion as to the advantages of these mercurial injections took place between Dr. Lawrence Wolff, who favored them, and Dr. J. William White, who opposed them, at a meeting of the Philadelphia County Medical Society. The conclusions arrived at by Dr. White were published in the THERAPEUTIC GAZETTE. Although at first glance White's views seem to be distinctly opposed to the use of the hypodermic injections, in reality we believe that to a great extent the ground taken therein is more moderate and correct.

It is the history of matters medical that all methods of treatment which are new are heralded with a blast of trumpets, which in many cases ends in a very feeble note of praise when sufficient experience has been accumulated by a number of observers to reach correct conclusions as to their value. We believe that the proper attitude for the general practitioner to assume in regard to the treatment of syphilis is about as follows: namely, that hypodermic injections of mercury are not to be resorted to if they can be avoided, or, to express it differently, unless strong indications for their use are present.

There are two recent instances in which methods of treatment have been strongly urged, and in which a sufficient time has elapsed to permit these methods to find their proper level. The antipyretic drugs, about

\* Since this leading article was written the two valuable papers on this topic, published in this issue of the GAZETTE, by Dr. Wolff and Dr. Horwitz, were received. The leading article is published as written as a short, third contribution to the subject, written independently of these papers. The paper found in our original columns is Dr. Wolff's second contribution to the subject, not the one referred to in the editorial.

which there was such a furore some years ago, are now only resorted to when other means for reducing fever cannot be utilized. They have been found to fall short of the great things that they promised when first introduced, and they have risen above the position accorded to them by practitioners with pessimistic views, who declared them absolutely useless. Similarly, we now know that hypodermic injections of quinine are never to be employed unless the condition of the stomach and rectum prevent the administration of the drug by the ordinary channels, or unless the malarial poison is acting so strongly as to demand the administration of quinine by every possible avenue of entrance into the body. We believe that the ultimate conclusion of the profession in regard to the hypodermic injection of mercurials in syphilis will certainly be identical with that governing their use of quinine in malarial fever. There can be no doubt that a certain number of instances do arise in which, by reason of severe infection, susceptibility of the patient, or inability to take mercury by the ordinary means, hypodermic injections are absolutely necessary. In the same way that we give quinine by the mouth, the rectum, and hypodermically in pernicious malarial fever, so do we give mercury by the mouth, by inunctions, by sublimation, and by the hypodermic needle in malignant syphilis. Our reasons for believing that hypodermic injections of mercurials are not to be resorted to as a routine treatment of syphilis are several. In the first place, all forms of hypodermic medication possess disadvantages not possessed by the use of drugs by the mouth. There is always some danger of entering a vein, of producing an abscess, or of causing local pain. When mercurials are so employed, the danger of abscess, of pain, or of milder inflammatory manifestations is greatly increased, and the presence of an indurated spot where the hypodermic injection has been given proves that it is not the simplest form of medication in syphilis.

Of the mercurial preparations which are best administered hypodermically in syphilis, the two which surpass all others are undoubtedly the bichloride of mercury, in the dose of  $\frac{1}{10}$  grain, dissolved in 10 or 15 drops of distilled water, every second or third day, or gray oil, or oleum cinerium, which was first introduced into medicine by Lang, of Vienna.

In all cases the injection should be given deeply and in some portion of the body in which the tissues are loose, as the buttock or the broad of the back. Gray oil, it will be remembered, is prepared as follows: two drachms

of lanolin is rubbed up with enough chloroform to emulsify it. The rubbing process is continued until most of the chloroform is evaporated, and while the mixture is still in a fluid state, metallic mercury in double the amount of lanolin—four drachms—is added and the trituration continued. By this means an ointment of mercury is left which equals 2 parts of mercury and 1 of lanolin. This is sometimes called strong gray ointment. For hypodermic injection, 3 parts of this gray ointment are added to 1 part of olive oil, or it may be still further diluted by adding olive oil in the proportion of half and half. Of this mixture 10 to 20 minims may be injected every second or third day.

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## Reports on Therapeutic Progress.

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### *GUAIACOL AS A TOPICAL APPLICATION IN THE TREATMENT OF ACUTE TONSILLITIS.*

RAYMOND (*Medical Record*, March 24, 1894), as the result of experience, found that the application of guaiacol is somewhat unpleasant and is attended with quite a little smarting, but as its duration is only from one to five minutes in most cases (although in some instances it lasted for several hours), the relief caused by the application more than overbalanced the pain. However, it is frequently no more painful than nitrate of silver or many other remedies commonly used, and possesses many advantages over them, the cardinal one being as a curative measure or as an abortifacient. It was thought that a thorough application of cocaine (ten-per-cent. solution) prior to the application of guaiacol would lessen the degree of smarting, but it seemed to aggravate it. The applications were made by means of a cotton swab dipped into pure guaiacol, and applied over the surface of the tonsils, care being taken to prevent it from getting into the larynx. To keep the throat moistened, troches of althea, or guaiac, or gargles were given. In every case where marked febrile symptoms were noted, the temperature was found to drop from one degree to normal within a few hours. In one case where it registered 103.5° F., it fell to normal in four hours.

In the superficial or lacunar variety the inflammation was terminated far more speedily than in the phlegmonous.

In a number of cases with a history of having had quinsy, and where every evidence of a re-

current attack was present, it was found that not more than two applications were necessary to abort the disease, and in many instances it did not last more than forty-eight hours, and in none did suppuration occur. In many cases where patients were unable to swallow without intense pain, they were able to do so within ten minutes. In a few patients suffering from a primary attack, swelling was seen to subside within a few hours.

#### THE VALUE OF GUAIACOL AS AN ANTI-PYRETIC.

THAYER, of Baltimore, contributes a valuable therapeutic summary on this topic to the *Medical News* of March 31, 1894, and concludes from the few experiments which he has made, and from a consideration of the results obtained by other observers, that we are perhaps justified in asserting that guaiacol applied to the skin is readily absorbed into the economy; that its application is followed in most instances of fever by a gradual reduction in temperature, which reaches its lowest point generally between three and four hours after the application; that this fall of temperature is almost always associated with disagreeably profuse sweating; at a variable period, usually a short time after the lowest point is reached, the temperature rises rapidly, generally in association with marked chilly sensations, if not with an actual chill; that a dose of more than 2 cubic centimetres is rarely advisable; that exactly similar results are produced by the absorption of guaiacol through any other channel (the rectum or the subcutaneous tissues); that the antipyretic action is exactly similar to that which has been previously observed to follow a corresponding use of creosote and carbolic acid; that, owing to the disagreeable effects of the immediate application of guaiacol (sweating and chilliness) and the weakening effects of the continued use, its employment as an antipyretic, as in the case of carbolic acid and creosote, will probably have but a limited application.

#### THE TREATMENT OF PREGNANCY COMPLICATED BY HEART-DISEASE.

SEARS (*Boston Medical and Surgical Journal*, March 15, 1894), in a paper with the above title, reaches the following conclusions:

1. That many women with valvular disease, even when it is situated at the mitral orifice, pass through repeated pregnancies without the development of serious symptoms, and at times

without suspecting that they are victims of such disease.

2. That miscarriages are very frequent, and the chances of the child's surviving more than a few years are doubtful. If the mother's condition during pregnancy has been serious, the probable fate of the child should take much more prominence in deciding the question of abortion.

3. That the necessity of inducing abortion is very apparent if grave symptoms have appeared during the early months or are present with an advancing lesion, or if there is a history of extreme danger in the preceding pregnancy.

4. That if the necessity for an abortion becomes apparent, the sooner it is done the better, while the fœtus is still small and the expulsive force chiefly furnished by the uterus.

5. That the hope that relief may be given when the case has become desperate by inducing abortion is delusive, as it is possible that it only increases the danger.

6. That marriage should be forbidden, except perhaps in very unusual cases, to women suffering from cardiac disease.

#### DEATH UNDER ETHYL BROMIDE.

KOCHLER (*Centralbl. f. Chir.*, No 2, 1894) reports an instance of death during the administration of ethyl bromide. The patient, a weak, though otherwise apparently healthy, woman, aged twenty-one, was about to be submitted to an operation for rectal fistula. The anæsthetic was given in small quantities with a mask. After a very transient and mild stage of excitement the heart's action suddenly ceased. The breathing continued for about half an hour, but, notwithstanding galvanism of the phrenic nerves, subcutaneous injections of ether, and injections of saline solution into the median basilic vein, the patient never rallied. There can be no doubt, the author thinks, that the fatal result in this case was due to cardiac paralysis. The air-passages remained quite free, and breathing persisted for some time after the cessation of the cardiac movements. There was no indication of any respiratory disturbance. The phrenic nerves ceased to react to the electric current between four and five minutes after the arrest of the heart's action. The anæsthetic, on careful examination, was found to be pure. Ethyl bromide, it is held, cannot be regarded as an absolutely safe anæsthetic. No fewer than five cases have been recorded in which death was the result of a careful administration of a pure preparation

of ethyl bromide. The result of the necropsy in the author's case confirmed the suspicions that had been suggested by the very sudden arrest of the circulation. The left side of the heart was contracted and empty, and the walls collapsed. The muscular structure showed signs of extreme fatty degeneration, being speckled and studded with white patches. The surface of the heart was covered with a thick layer of fat, extensions of which could be traced in the very thin muscular walls of the ventricles.—*British Medical Journal*, March 10, 1894.

#### HYPODERMIC INJECTIONS OF THIOSINAMIN VALUELESS IN TUBERCULOSIS OF LARYNX AND LUNGS.

SENDZIAK concludes a paper on this subject as follows:

Thiosinamin, subcutaneously applied, has in certain cases a positive influence upon the course of the tubercular process in the larynx.

Upon the tubercular process of the lungs thiosinamin seems not to have any positive influence.

Also upon the general condition in most cases this drug does not act satisfactorily.

In lupus of the nose, thiosinamin, like tuberculin, may, Hebra asserts, be applied with comparatively great advantage.

This drug seems not to produce general reaction, which, as is known, was the weak point of Koch's remedy; but it must be applied with certain precautions in tuberculosis of the lungs and larynx.

Finally, after making the above observations, the author arrived at the conviction that the results obtained by him with thiosinamin, subcutaneously applied, in tubercular diseases of the larynx and lungs, were not very encouraging, which disheartened him from further experiments with this drug.

In his opinion, thiosinamin, so warmly recommended by Hebra in laryngeal and pulmonary tuberculosis, will share the same lot as its antecedents, Koch's tuberculin, Klebs's tuberculocidin, and Liebreich's cantharidinate of potassium,—i.e., it will be lost in oblivion.

Agreeing with Hebra as to the appearance of local reaction in lupus, obtained by thiosinamin, Spiegler, in another paper, affirms that he did not discover any distinct therapeutic effects of this drug in this disease, and he was obliged to return to his former local treatment.—*Journal of Laryngology, Rhinology, and Otology*, March, 1894.

#### BENEFICIAL RESULTS OF SALICYLATE OF SODIUM IN INFANTILE TETANUS.

DRS. SOTOLONGO and LYNCH describe a case of tetanus in its initial state, occurring in a baby nine days old, and which in all probability arose through infection at the umbilicus. The mother was delivered by an ignorant midwife, and, as a result, suppuration at the umbilicus followed. The wound was treated with bichloride of mercury, iodoform, and antiseptic dressings, while internally the hydrate of chloral and the bromides were administered. The trismus was so pronounced that the child's mouth could hardly be forced open, and its food and medicine were given drop by drop. The improvement was hardly perceptible, and, fearing a fatal issue, the author decided to try the salicylate of sodium. Accordingly, 20 centigrammes (4 grains) were given in two portions after the first dose; the father gave the second powder at the end of the third hour. On the following day a notable improvement was perceptible, and the drug was continued. The baby made a complete recovery.—*Journal of Nervous and Mental Diseases*, March, 1894.

#### SULPHUR IN DIPHTHERIA.

BAÜMLER, of Freiburg, has for years employed sulphur in diphtheria. He was first induced to try it by the recommendation given to this local treatment by Professor von Liebermeister, in his lectures on special pathology and therapeutics, where he says, "As a local application, I generally use powdering with crude sublimed sulphur, by abundantly applying with a thick, soft camel's-hair brush the dry powder to the diseased mucous membrane. This powdering of the pharynx with sulphur is, according to circumstances, repeated every hour or every two hours, or only three or four times a day." On the strength of several years' experience, the writer entirely concurs with Professor Liebermeister's further remarks,—“I have the impression that by this treatment, when commenced early, I attain more than by any other which I had tried before, and that with these applications the cases, on an average, take a considerably more favorable course than without it.” Bäumler has repeatedly seen cases, in which gangrene of the uvula and part of the soft palate seemed unavoidable, take a favorable turn in a few days, the membranes becoming detached and the swelling going down, leaving much less loss of substance behind than was to be feared when first seeing



the case. With less extensive disease we could frequently notice the first effects of the application to consist in a somewhat increased injection (not congestion) of the mucous membrane on the borders of the exudation, the latter becoming more sharply defined at its edges after a few applications, and then beginning to get loose and be detached.

In the majority of fresh cases of diphtheritic sore throat, as well as of lacunar tonsillitis, two or three applications a day seemed sufficient, the patients in the mean time, when able, gargling with a weak solution of permanganate of potassium, and being subjected to such general treatment as the case required (cool baths or the wet sheet, or occasionally a dose of antipyrin when there was high pyrexia, and great care as to feeding by mouth, or, if necessary, by the rectum).

How the sulphur acts in these cases the writer is unable to say, and mentions that there seems to be no particular difference in the action of sublimed or precipitated sulphur. We are not aware that as yet any experiments have been made with regard to the action of sulphur on the particular bacteria which cause diphtheritic and other kinds of sore throats (Loeffler's bacilli and streptococcus chiefly). But while anxious for the scientific explanation of the facts so frequently observed, we need not delay making the experience gained more generally useful.

The action of this remedy being a merely local one, its principal field of usefulness will be in diphtheria of the fauces, where it can be applied directly and abundantly. The larynx also, and in certain cases the upper part of the trachea, may be reached by using a curved insufflator for blowing in the powder. But no effect can, of course, be expected when the disease extends into the bronchial tubes, or when the general blood-poisoning has gone beyond a certain degree, nor even locally, where extensive sloughing has already taken place in the throat, and when, in consequence thereof, rectal feeding is the only, and then mostly insufficient, means to prevent exhaustion.

The author is unable to say whether remedies which have more recently been recommended, such as pyoktanin or the peroxide of hydrogen, which has found such warm supporters in America, give even better results than the sulphur, as, especially in severe cases, he did not feel justified in foregoing the benefits of a remedy whose efficacy he had had ample personal experience of.—*British Medical Journal*, March 3, 1894.

#### MALAKINE: A NEW ANTISEPTIC.

According to the *Journal de Médecine de Paris* for February 25, 1894, this substance results from the combination of salicylic aldehyde and parphenetidine, and occurs in small, needle-like crystals of a clear yellow color, which are insoluble in water. As a result of his experiments, JACQUET, of Basel, finds that the drug produces a reduction of temperature, which, unlike that produced by antipyrin and acetanilide, comes on gradually. He found that in typhoid fever and in the fever of tuberculosis the drug exerts its best influence. After the administration of 15 grains the temperature began to fall in from one and a half to two hours after ingestion, and reached its full fall four to six hours afterwards. A repetition of the dose is followed by an increase of effect.

#### A NEW ANTINEURALGIC.

Under the name neurodine, the chemical name of which is acetyl-para-oxyphenylurethane, the *Journal de Médecine de Paris* states that this compound is useful for the relief of neuralgia, and that Von Mering recommends it in the dose of 15 to 20 grains as a succedaneum to phenacetine in painful affections of the head. The pain disappears in about half an hour after the drug is taken. The drug acts equally as an antipyretic, reducing the temperature from two to three degrees in the dose of 7 or 8 grains. The effect, however, is rapid, and is apt to be followed by cyanosis and sweating. It is best given in cachets.

#### ARSENIC AND CANCER.

Among the ingenious and plausible suggestions emanating from Mr. JONATHAN HUTCHINSON is the possibility of the evolution of epithelioma being facilitated by a long course of arsenic. In his well-known paper on the subject he alleged a number of instances in which there was certainly presumptive evidence of arsenic having thus favored the evolution of the cancerous outbreak. At a recent meeting of the Clinical Society *apropos* of a case of multiple epithelioma following a course of arsenic, he called attention to certain peculiar changes in the skin of the palms and soles which, in his opinion, indicate that it is time to desist from the administration of the drug,—viz., a furfuraceous thickening of the skin in those situations. We call attention to this statement in order that our readers may avail themselves of any and every opportunity of ascertaining how far the

suggestion is confirmed by clinical observation.—*Medical Press and Circular*, February 21, 1894.

#### THE EXTERNAL USE OF GUAIACOL.

In *La Province Médicale* for February 3 there is an article on this subject, of which the following is the substance: This drug, which was used by Sciolla and Bard, has for some time been employed as an antithermic. It consists in painting the greater part of the exterior wall of the thorax, and sometimes the forearms, with pure guaiacol. According to different authors, the doses are variable, ranging from 1 to 2 cubic centimetres up to 7 or 8. There is a difference of opinion as to the employment of this liquid. Sciolla, Bard, and other physicians use pure guaiacol, while others, like Desplats, mix it with glycerin or alcohol. In several cases of advanced phthisis a marked reduction of two degrees has been obtained by painting the entire surface of the front of the thorax with pure guaiacol. Unfortunately, the effects of this treatment are only temporary, not lasting more than three or four days. Sometimes, also, applications of this kind produce a marked rise in temperature,—in one case of two degrees. It is necessary, then, in making use of this procedure to ascertain the susceptibility of the patient, and to use at first small and then progressively large doses. There have been of late years interesting attempts in the employment of this procedure. Casasovici and Miron Sigalea have used guaiacol mixed with tincture of iodine, in the treatment of pleurisy, in the following proportion: Tincture of iodine, 385 grains; guaiacol, 75 grains. This quantity is used in a single application, and the diseased parts are thoroughly and extensively painted with it every night. These applications cause a considerable reduction of temperature, profuse perspiration, and an increased flow of urine, followed soon after by complete resorption. These results seem to have been obtained, particularly in one case, where there was abundant pleuritic effusion on the left side, in which tapping had not been followed by any relief, but had caused a considerable rise in temperature, by the application of iodized guaiacol, the fever disappearing in a few days and the effusion becoming resorbed.

M. Desplats has recently conceived the idea of applying guaiacol in the treatment of painful rheumatic inflammation of the joints, after having observed a case in which applications of guaiacol had been used with excellent results. He has used a mixture of equal parts of guaiacol

and pure glycerin. The joints were thoroughly painted with this mixture and afterwards covered with a dry dressing. In one case of acute rheumatism and in three others of arthritis deformans with sharp pains the results were excellent. The pain was completely subdued, and in the first case the patient recovered rapidly. This procedure has recently been employed in applying guaiacol for articular neuralgia of the shoulder, which was very painful, in a tuberculous patient, who experienced marked relief. It is easily employed, and not dangerous if the indications mentioned are conformed to.—*New York Medical Journal*, March 3, 1894.

#### THE ABORTIVE TREATMENT OF QUINSY.

In the February number of the *Annales des Maladies de l'Oreille, du Larynx, du Nez, et du Pharynx* there is an abstract of an article by M. Liégeois, published in the *Revue de Clinique et de Thérapeutique*. The author states that he has succeeded in aborting an attack of quinsy between the fourth and sixth days in six cases by means of combined local and general treatment. At the outset he cauterizes the tonsil once by painting it with a solution of 1 part of zinc chloride in 20 parts of glycerin. The eschar separates in forty-eight hours. After the cauterization, a drachm of salol is to be taken in the course of twelve hours. The salol acts as an intestinal antiseptic, an antipyretic, and an analgesic. [This treatment certainly is heroic and the dose of salol dangerously large.—ED.]—*New York Medical Journal*, March 3, 1894.

#### NOTES ON THE PHYSIOLOGICAL ACTION OF OZONE PREPARATIONS.

In the *Medical Record* of March 3, 1894, DR. THOMPSON, of New York, contributes an interesting article on this subject. The conclusions at which he arrives respecting the effect of ozonizing agents when given by the stomach or injected directly into the intestine or the blood, after a series of carefully carried out laboratory experiments, are as follows:

1. When injected in the circulation in full strength—i.e., fifteen volumes per cent.—they have a very destructive action upon the blood, thereby ultimately having the effect of reducing rather than of oxidizing agents for the tissues.
2. Acting through the stomach or intestine, they may similarly affect the blood, and in addition they destroy the gastric and intestinal mucous membrane.
3. Given in medicinal doses by the stomach,

their only benefit, if any, consists purely in their local action in the alimentary canal, in possibly preventing abnormal fermentations.

4. If so used, care should be exercised, owing to the great variability in strength of different preparations.

5. Ozone is of no real value to the tissues, whether inhaled or drunk in fluid preparations, and it may be exceedingly harmful.

[These results are of interest in view of the fact that many manufacturers of nostrums purporting to contain ozone claim that these substances give off oxygen or ozone to the body when taken internally. Most of these claims are equivalent in value, as proved by Dr. Thompson, to the claims of the manufacturers of electric belts.—Ed.]

#### THE USE OF DIGITALIS IN CHILDREN.

COMBY contributes an article on this topic to *La Médecine Moderne* for February 17, 1894. He points out that digitalis, in the eye of the laity and of the medical profession, is a remedy *par excellence* for maladies of the heart, and finds its chief application in the treatment of cardiac insufficiency. The other remedies which can be considered as adjuvants to digitalis in these circumstances are caffeine, sparteine, kola, and strophanthus. Of the indications and contra-indications governing the dosage and prescription of digitalis to children he speaks as follows:

Children are exceedingly susceptible to the action of this drug. There are several indications, nevertheless, for its employment. First, in those diseases of the heart in which there is insufficiency and cardiac feebleness, either congenital or acquired, or in those instances in which the action of the heart is too rapid or irregular. The drug under these circumstances acts as a tonic to the heart, as quinine does to the general system. Naturally, it does best in mitral insufficiency and least well in aortic regurgitation. It is indicated in those cases where compensatory hypertrophy is lacking. He thinks it is also of value in acute endo- and pericarditis. Secondly, digitalis is indicated in certain disorders of the respiratory apparatus, as, for example, pleurisy and hydrothorax, where it favors absorption of the exudate by its diuretic influence. In pneumonia it tends to reduce temperature, and it is claimed to have a slight jugulating power.

Simon believes that digitalis is of value in the treatment of irritability of the heart, and also that because of its steady influence over

the circulation it may be employed with advantage in hæmoptysis.

As to whether digitalis is of value in renal troubles in children, Comby thinks that during the acute stages of the malady digitalis should not be employed and a milk diet solely resorted to. On the other hand, in chronic renal disease with passive congestion, with or without anasarca, the employment of digitalis is a measure often of advantage and without danger. Should there, however, be hypertrophy of the left ventricle, digitalis is contra-indicated. In acute infectious diseases digitalis is indicated only in the presence of complications involving the organs already named. It should also be remembered that it possesses some antipyretic influence. In the treatment of disease of the nervous system, through its sedative influence, digitalis is believed to be of value in epilepsy and in mania, the dose under these circumstances being as much as 30 drops of the tincture to a child of fourteen years. In regard to the prescription of digitalis, Comby directs as follows:

R Powdered digitalis leaves, gr. ii;  
Distilled water, ʒxii;  
Syrup, ʒxii.

Make an infusion, and administer a teaspoonful to a dessertspoonful every two hours to a child of ten years.

Or, for a child of the same age:

R Powdered digitalis, gr. i;  
Extract of digitalis, gr. i;  
Excipient and glycerin, a sufficient quantity.

Make into one pill, and administer such a pill three times a day.

[This is certainly a very large dose of digitalis, even for an adult.—Ed.]

#### RESEARCHES REGARDING HYDROGEN PEROXIDE SOLUTION.

SQUIBB publishes (*Ephemeris*, January, 1894) an elaborate account of experiments performed with hydrogen peroxide solution, with a view to ascertaining the best mode of preparation and to determine its keeping qualities.

It was found by these experiments that at ordinary temperatures and with ordinary agitation the dioxide in the solution is likely to be all practically decomposed in about eight weeks' time. Pressure exerted no discoverable influence on this change. Weak bottles may burst if securely corked, but the packing bottle of ordinary strength is able to withstand all the pressure developed from its contents.

The author endeavored to find a preservative

it when he awakes with a heaviness in the early morning, instead of turning over and going to sleep again. The quantity necessarily varies with different individuals and with the severity of the headache, but 30 or 35 grains of bromide of potassium with 5 to 15 grains of salicylate of sodium, in half a tumblerful of water, may be looked upon as an average dose. If the patient feels the irritability indicative of the approaching headache overnight, or if he should have the excessive brightness which is the precursor of headache in others, he should take this dose at bedtime, and will very probably awake without the headache. If, in spite of it, he should awake with a heaviness in his head between four and six, he should repeat the dose, or should take it for the first time if no indication of headache has been felt the night before, but the heaviness has come on during sleep. He will then probably turn round, fall asleep again, and awake without the headache. If, however, there should be either heaviness or headache on awakening about 7 A.M., a third dose should be taken. The writer has tried the bromide and the salicylate separately, but he does not think they act nearly so well as when taken in combination. Ten days before writing the present article the writer received a letter from a physician who was suffering from a very severe headache after influenza. He had tried antipyrin, which had relieved it for the time, but had to be continued every twenty-four hours. He had also tried chloride of ammonium and bromide of ammonium with the same result. He was advised to try 20 grains of salicylate of sodium with 40 of bromide of potassium in half a tumblerful of water, and after four doses of the mixture the pain subsided.

#### PRESCRIPTIONS.

Application for chronic pharyngitis:

R Iod., gr. vi;  
Potassii iodidi, gr. xii;  
Mentholi, ʒi;  
Glycerini, q. s. ad ʒi. M.

Apply with a camel's-hair brush twice or thrice daily.

Useful in bronchitic asthma:

R Potassii iodidi, ʒii;  
Ammon. carb., ʒi;  
Tinct. lobeliae, ʒii;  
Sp. chloroformi, ʒiv;  
Vin. ipecac., ʒi;  
Infus. senegae, q. s. ad ʒvi. M.

A tablespoonful in a wineglassful of water every four

Incontinence of urine:

R Tincturae belladonnae,  
Tincturae cubebae, of each, ʒii;  
Tincturae nucis vomicae,  
Tincturae rhois aromaticae, of each, ʒi;  
Tincturae cascariillae, ʒii.

12 drops at bedtime for a child from seven to ten years.

The removal of warts:

R Hydrarg. bichlor., gr. v;  
Acid. salicyl., ʒi;  
Collodion, ʒi. M.

This is applied every day, the upper crust of the previous application being removed before a fresh one is made. Usually after four applications the wart becomes so softened that gentle friction will remove it painlessly. If a further dressing is required, a five-per-cent. salicylic-lanolin ointment is all that is necessary.

*Ozæna*.—Dr. Stein obtains in ozæna most remarkable results from painting the nasal fossæ with a solution of trichloroacetic acid. The painting is done by means of a piece of cotton-wool steeped in a solution (one-tenth per cent.) and fixed on the point of a flexible wire. The operation is done three times daily for the first few days and then once a day. The strength of the solution is gradually increased.

*Asthma*.—The following will be found most useful in this distressing complaint:

R Chloralis,  
Potassii iodidi, of each, ʒss;  
Syrup of oranges, ʒvi;  
Water, ʒvi.  
2 to 5 tablespoonfuls a day.

—*Medical Press and Circular*, February 21, 1894.

#### THE TREATMENT OF PERITONITIS.

During the last few weeks, MR. FREDERICK TREVES, of London, has delivered a series of valuable lectures on peritonitis, which have appeared in part in the *Medical Press and Circular*. They form the best statement of facts about the disease that we know of. Part of his last lecture was devoted to treatment, and every word of it seems so useful to the practising doctor that we reproduce it for our readers, lest, in an attempt to condense it, its value be lost.

In considering the treatment of any grave affection, it is well to recollect that certain of the so-called symptoms of a disease are not gross evidences of a disturbing evil within the

body, but are rather the natural expression on the part of the organism of an attempt to rid itself of a trouble. Many symptoms are, in fact, curative acts, and are the measures of a natural treatment and not the mere purposeless signs of an unnatural disturbance.

In peritonitis, the exhaustion, the rigidity of the belly-wall, the pain, the vomiting, and the not infrequent sense that the bowel needs to be emptied of flatus, would suggest the recommendation of absolute rest, of attempts to relieve pain, of starvation, and, under certain circumstances, of means to relieve the intestine. If, in contemplating a patient with peritonitis, one could regard his more conspicuous symptoms as natural attempts to afford relief, they would appear to be in the direction of securing quiet within the inclosure of the abdomen, and of effecting an evacuation of the alimentary canal.

In the account which follows of the treatment of peritonitis, this suggestion from the therapeutics of nature is not disregarded.

1. *Rest*.—Absolute rest in the recumbent position appears to be the first obvious indication. The knees may be flexed over a pillow to lessen the tension on the abdominal walls and to favor the patient's instinct to assume that posture. The upper part of the chest and the ever-restless upper limbs should be protected by a woollen jacket, and no reasonable restraint offered to the patient's inclination to hold the hands above the head. This favorite posture, by acting upon the lower parts of the thoracic wall, assists also in diminishing the tension within the abdomen. It is cruel to insist that the hands should be kept beneath the bedclothes. The state of misery in peritonitis is acute enough without being increased by purposeless and rigid formulæ. Cold hands do not cause death, but as on exposure they tend to become cold, they should be covered up. The wretchedness of restlessness has a natural relief in little movements.

2. *Feeding*.—The old rule of eighty years ago of giving as little food as possible by the mouth cannot be improved upon. The stomach is not in a condition to receive nourishment, and what is taken usually remains unutilized and is returned unchanged. The practice sometimes met with of laboriously plying the patient with teaspoonfuls of this or that meat extract recalls the legend of the Daïdes, who spent their energies in pouring water into pitchers without bottoms.

In the matter of feeding there are two extremes to be avoided. The first is the rigid, unreasoning, and often needlessly cruel prohibition of any kind of food by the mouth;

and the second is the reckless and intemperate use of ice or iced fluids.

Thirst is often a most terrible symptom in peritonitis. It is not always quite relieved—at first, at least—by rectal injections. The patient is ready to give his life for a drop of cold water. If he takes it, he is sick, but he is much relieved. This little indulgence does not introduce anew the symptoms of vomiting. It is there, but it is latent, and the drop of cold water only makes it evident. The patient will not die of vomiting, and simply because a rigid exclusion of all fluid by the mouth does not render the symptom apparent, it does not render it non-existing. The man would sooner vomit than endure this thirst. Very often great relief is given by allowing a fairly copious draught of fluid, which is soon rejected, and which—as it were, by washing out the stomach—leaves the patient for a while infinitely comforted. On the other hand, the perpetual sucking of ice is as bad as the perpetual teaspoonful of useless jelly of decomposable meat-juice. The filling of the stomach with iced water does undoubtedly add to the general depression of the patient, especially when vomiting has been brought into abeyance by morphine.

The right course appears to lie between these two extremes. There should be no rigid formula except this: let the patient take as little food as possible by the mouth. If there be a raging thirst, let him have a little ice,—and very little suffices,—or a little iced milk and soda-water; or if, as is common, the inclination lies to something warm, let him take a few teaspoonfuls of hot water or of weak tea made hot, or, of beef-tea at a like temperature. It is not the nourishment that is needed, but some fluid in the stomach.

It is better, within reasonable limits, to be guided by the patient's own instincts than by a blind formula founded upon a doubtful physiology.

3. *Opium*.—Here, again, the old practice appears to be the best. Give as little opium as possible. In the early stages of acute peritonitis, and especially in the perforative forms and in those depending upon appendix troubles, morphine, in the form of a hypodermic, is absolutely necessary. In the worst instances, it may certainly avert death from shock. Under its influence the patient revives and the more intense symptoms become greatly modified. Morphine should never become a feature in the routine care of peritonitis: it masks the symptoms, hinders the natural process of cure, and hampers treatment. The indication for it

is actual pain, and not mere restlessness and misery. In the really septic forms but very little morphine is called for, and often none at all. Its evil effect in the after-treatment of cases of abdominal section has been amply demonstrated. In quite hopeless cases there can be no objection to its freer employment, but in other instances the administration and the dose of the drug must be sanctioned and measured by the one symptom,—pain.

4. *Aperients*.—At the commencement of the century the use of aperients was a necessary element in the routine treatment of peritonitis. By aperient treatment may be understood the obtaining of an action of the bowels by either drugs or enemata. After a certain number of years the practice altered, and the dictum went forth that when any signs of peritonitis were present, aperients were to be absolutely forbidden.

Within the last few years the more ancient method has been revived, but it has been revived with very radical modifications. To Mr. Lawson Tait the profession is indebted for this return to an almost forgotten practice, and, above all, for the employment of that practice with the new element of discrimination. Mr. Tait's measure has been frequently spoken of as "the treatment of peritonitis by aperients," and it has been assumed by some—and probably with disaster—that a purgative is necessary in every case of peritoneal inflammation. Mr. Tait's precise words on this subject are as follows: "I have never said that the purgative treatment will cure peritonitis, for peritonitis, once it is completely established, is a practically incurable disease and almost uniformly fatal."

It is on this very point that the centre of the position with regard to this treatment turns. Aperients can never be adopted in the routine treatment of peritonitis. In the larger proportion of cases this measure is entirely useless, and in the great series of the septic forms it is more or less impracticable.

It is a fact that the most successful treatment of acute obstruction of a certain grade is that which provides for a thorough evacuation of the loaded gut. A blindly-executed enterotomy, with an utter ignoring of the cause of the obstruction, has been attended by better results than have operations in which the agent of the obstruction has been discovered after elaborate search, and has been satisfactorily dealt with. This treatment of acute obstruction by the evacuation of the bowel before all things we owe to Benjamin Travers, the father of intestinal surgery. In cases of strangulation

of a certain degree he insisted that the bowel should be cut into and emptied, even after the obstructing band has been removed. He considered that the operation was not complete until this had been done. He urged that safety was only to be obtained by an evacuation of the gut, and he supported his views by numerous cases and experiments.

Another illustration of these self-same points is afforded by perityphlitis. In a previous section of these lectures it was shown that those cases of perityphlitis in which there is diarrhoea, or in which the bowels act naturally or under the influence of aperients, are attended with a much lower mortality than are the cases in which constipation is marked. The writer is convinced from his experience of the value of the aperient treatment in the earliest stages of these cases, and of the pursuit of the same measure throughout in selected instances. In some cases, however, nothing within reason will bring about an action of the bowels. When once general peritonitis has established itself, an aperient is without avail.

5. *Bloodletting*.—This measure of treatment may with advantage be more extensively employed. It is no longer likely to be used in the unreasoning and mechanical fashion of by-gone days. In robust forms of localized peritonitis, bloodletting is attended with admirable results. In perityphlitis the application of half a dozen leeches often acts with magical effect. In the older accounts of the treatment of peritonitis by bleeding, no good appears to have followed in cases in which the inflammation was diffused, except, perhaps, in some examples due to injury. On theoretical grounds this is precisely what would be expected.

6. *Operative Measures*.—These are represented by incision and drainage, with or without irrigation. This treatment must be considered, as it applies to peritonitis, under two entirely different aspects. In one series of cases there is vigorous, well-defined inflammation, the local symptoms are marked, pus is produced and may be considerable in amount, and the exudation is more or less clearly localized. In the other series of cases the peritonitis is diffused, the constitutional symptoms are more prominent than the local ones, the changes in the serous membrane—so far as evidence of inflammation is concerned—are comparatively slight, and are out of proportion to the general disturbance.

In the first series of cases surgical interference by incision and drainage ranks with the procedure of evacuating a large abscess.

In the second series the cut into the ab-

domen and the subsequent flushing out or drainage are to be compared with the washing out of the stomach after an active poison has been swallowed.

The operative treatment of suppurative peritonitis, especially when the effusion is localized, has been remarkably successful. Records of the operation extend back into the eighteenth century, and all that modern surgery can lay claim to is the application of the treatment with greater boldness, with greater frequency, and with infinitely less delay.

The operative treatment of general diffused non-tuberculous peritonitis has so far no record to boast of and little progress to chronicle. It is doubtful whether a single human life has been saved by surgical interference in a genuine case of peritoneal toxæmia. Surgical treatment has been most discouraging in acute peritonitis following upon gangrenous hernia, upon operation, and upon puerperal infection. It has met with but little better results in cases of perforation in which the serous inflammation has been well established.

As to the actual mode of operating adapted for the different varieties of peritonitis, attention should be drawn to the following points. In all cases it is to be assumed that the skin over the operation area is cleansed and prepared in a suitable way, and that the surgeon adopts those measures which students in their examination papers are so fond of describing as "strict antiseptic precautions."

In cases of localized purulent peritonitis an incision should be made into the collection by the most direct route. When the pus has escaped, a rubber drainage-tube of suitable size and with stiff fenestrated walls should be passed to the bottom of the cavity. A dressing of some absorbent material, such as Tillmann's papers, sal alembroth, or cyanide gauze, is then applied. No advantage follows fuller evacuation of the pus by squeezing or the immediate irrigation of the cavity, and distinct harm may be done by scraping the wall of the inclosure, by persistent searching for a diseased appendix or other cause of the trouble, and by stuffing the exposed space with a considerable quantity of gauze.

At the end of twenty-four or thirty-six hours the irrigation of the cavity may be commenced and continued twice daily, and now and then a little iodoform emulsion may be introduced.

In some examples of perityphlitis a well-encapsulated collection of pus is not exposed, but the knife enters into an ill-defined district containing a variable quantity of thin, greenish,

and often offensive matter, which appears to saturate the tissues. In such circumstances a drain composed of strips of iodoform gauze, which are carefully introduced into the lowest accessible recesses of the region, is of advantage.

In cases of generalized peritonitis the procedure adopted must obviously depend upon the cause and degree of the trouble. If the exudation be serous, it will suffice if the fluid be evacuated, if the peritoneal cavity be gently dried in its most dependent parts by means of gauze sponges, and if the abdomen be closed without drainage.

When the exudation is sero-purulent, it is in many cases desirable that the cavity be irrigated. The fluid which appears to be best suited for this purpose is a .6-per-cent. salt solution made warm. After the washing, the depths of the peritoneal cavity are dried, so far as is possible, with sponges, iodoform powder is very freely dusted over the portion of the serous membrane most involved, a long, rubber, fenestrated drainage-tube is introduced, and the abdominal wound is closed. Any treatment directed against the cause of the peritonitis will be independent of these measures.

There are cases in which the peritonitis is more plastic in character. The intestines are found to be matted together with grayish lymph, which may be present in considerable quantity. The breaking down of these adhesions causes no little amount of bleeding, and such a step is evidently destructive of a certain desirable process of repair. Still, in order to search for the cause of the peritonitis, assuming such search to be indicated, and to set free an amount of exudation which is imprisoned between the attached coils, this freeing of adhesions must be to a certain very limited extent carried out. There will probably be a sero-purulent exudation in the belly cavity, and the gentlest movements of the fingers among the recently attached intestines will set free more fluid, which will be probably less opaque. A clump of adherent intestines will often cover and protect a perforation, and the ubiquitous fingers will many times close such an opening with more speed and security than are provided by any system of suturing.

As the surgeon, therefore, reaches what appears to be the starting-point of the peritonitis, he must proceed with the utmost caution, and be not only prepared, but rather inclined, to leave the actual *fons et origo mali* undemonstrated. The main purpose of the operation is to allow a noxious exudation to escape, and, if

possible, to free the peritoneum of the cause of its trouble. In the class of cases now under discussion, a perforation will be very often the starting-point of the peritonitis; the lapse of time and the plastic character of the inflammation afford evidence that the perforation is, for the time being, closed. If the operator can rid the serous cavity of the effects of the perforation, he may often leave the breach itself to be dealt with by natural means. The wisdom of doing no more than is necessary, or as little as is obvious, is well illustrated by these cases.

*Irrigation.*—Mere blood is better removed from the peritoneal cavity by sponging than by irrigation. If the operation area be well circumscribed, by sponges, if the shoulders be raised so that blood will reach the more dependent tracts, and if a sponge be introduced into the pelvis at an early stage of the procedure, there is little trouble with blood-clot. Coagulated blood is certainly very much more easily and certainly removed by means of gauze sponges than by a stream of water. The same observations apply to what may be termed healthy cyst contents, to fluid from hydatids, to bile, and to matter escaping from the stomach or intestine. With careful plugging and a watchful use of sponges a wide-spread extravasation is uncommon. If it does take place, the gauze can usually reach it. Irrigation would possibly have the effect of spreading the noxious fluid—as, for example, intestinal matters—over a still wider area. It may be said, therefore, that if certain precautions be taken, the cleansing of the peritoneal sac may be best and most safely accomplished by dry sponging.

If there be a considerable outpouring of such a material as putrid pus, or if there be a copious escape of gut contents, as from the giving way of a distended bowel above a point of obstruction, then it may be better that the whole peritoneal cavity be irrigated. In such a case the extravasated fluid and its wide distribution would render its complete removal by sponging difficult.

This irrigation is best conducted by the following means. The fluid used is a sterile .6-per-cent. salt solution at blood-heat. It is introduced at low pressure, but in a wide stream. The irrigating-tube is of soft rubber and may have a diameter of three-fourths of an inch. The tube itself is introduced into the belly cavity. The flow through it can be regulated by a clip. Any form of rigid nozzle is to be most strongly condemned. The solution should flow gently into the abdomen. The peritoneal cavity is to be flooded and not to be scoured out with a violent stream of water, which hisses

and rushes from a vulcanite nozzle as from a miniature fire-hose.

When the belly cavity is quite full of fluid, the surgeon's hand—which is already in position—is moved to and fro among the intestines with great gentleness. The coils of bowel are thus rinsed. By a movement of the hand and by pressure here and there, the fluid overflows from the wound and is replaced by the steady stream.

As the water which escapes becomes clear, the upper end of the operation-table is raised, so that the shoulders are much elevated, and then little has to be done but to wash out the most dependent parts, including especially the pelvis, and to allow the upper parts to drain. Finally, what fluid remains in the pelvis is removed with sponges, and a sponge in a holder is retained in the bottom of the pelvis during the introduction of the stitches, and only withdrawn at the last moment.

*Drainage.*—It will be allowed by most that drainage is necessary when either an actually noxious material is left in the peritoneal cavity or when it is assumed that an extensive effusion will follow upon the laparotomy. Considerable differences of opinion must exist as to what constitutes, either in substance or in amount, a noxious material, and also to what extent a possible effusion is to be met by drainage.

A stout rubber drainage-tube of large size and well fenestrated, passed into the midst of the area which is the most disturbed, appears in most cases to answer all reasonable purposes. It is not suited for most tuberculous cases. It must be assumed that the surgeon has no objection after the operation to frequent and perhaps extensive changes in the patient's position for the purpose of assisting the process of drainage. The author has seen no harm arise from a liberal fulfilment of this object. In certain instances, some of which have been indicated, a gauze drain appears to be better adapted for the case than a rubber one. This drain is simply composed of a long strand of iodoform gauze about one and a half inches wide and some five to six layers thick. It appears to have been first advocated by Bardenheuer. In a case of purulent peritonitis, Jalaguier has passed these strands of gauze in all directions among the intestinal coils from the diaphragm to the pelvis with good result.

A like proceeding in like cases is advocated by Steinthal.

The great objections to the iodoform drains are these: They may induce symptoms of poisoning if very extensively employed, they are most difficult to remove unless there be a free



discharge, and their use is apt to be followed by ventral hernia.

Some surgeons, either to supplement or to replace drainage, allow the wound to gape, or support it merely by a few quite loose sutures. This measure has been especially advocated in the treatment of perforative purulent peritonitis.

In conclusion, it only remains to be said that the surgical treatment of peritonitis has not yet reached a position which is either satisfactory or secure. There has been no lack of boldness in the measures used and little sense of discouragement at the results obtained. Surgical enterprise has been directed against effects and against damage done, rather than against causes and the beginnings of evil. The surgeon holds the same position in regard to peritonitis which was held some thirty years ago in regard to wounds and more accessible forms of inflammation. At that time he dealt only with the consequences of pathological wrongdoing, just as now he concerns himself with the prevention of troubles which he has learned to control. Peritonitis will be more successfully treated when measures can be directed against the sowing of the wind rather than, as now, against the curbing of the whirlwind.

#### THE TREATMENT OF BRONCHITIS.

In *La Tribune Médicale* for February 1, 1894, there is an article upon the treatment of bronchitis and tracheitis. In the treatment of the latter, rest is required in a room of moderate temperature, hot drinks are to be given with small doses of syrup of tolu and mild alcoholic stimulation. In addition, every two or three hours, two teaspoonfuls of the following mixture may be used:

R Tincture of aconite, gtt. xxx;  
Syrup of narceine, ℥i;  
Cherry-laurel water, ℥iv;  
Peppermint-water, ℥iii.

At the same time it is well to paint the chest about the area of the episternal notch with tincture of iodine.

In the treatment of acute bronchitis in the early stages, when there is hyperæmia and fever with cough without expectoration, first rest in bed with sweating, the administration of hot drinks which may contain alcoholic stimulants, the application over the chest of mild counter-irritants. For the stage in which expectoration is just beginning and fever is still present, kermes mineral, grains seven, and syrup, four ounces, a teaspoonful every two or three hours.

At night, for the relief of cough, small doses of chloral and morphine in simple syrup, which are placed in milk at the moment of taking, may be administered. For the treatment of chronic bronchitis it is well to employ a teaspoonful of cod-liver oil with creosote, and to administer after each meal a mixture composed of,—

R Arsenate of sodium, gr. i;  
Iodide of sodium, ℥ii;  
Water, ℥viii.  
Tablespoonful three times a day.

Or,

R Terpene,  
Eucalyptol, of each, gr. iii.

To be placed in a capsule and taken three times a day.

From a hygienic point of view, the patient suffering from chronic bronchitis should sponge the body every morning with warm water and alcohol, and afterwards use vigorous friction of the skin. He should abstain from tobacco. Should the chronic bronchitis be fetid, it is wise to use every two hours the following solution by inhalation:

R Eucalyptol, ℥i;  
Ninety-per-cent. alcohol, ℥iii;  
Water, ℥vi.

Place this in an inhaler and draw in the air impregnated with the vapor of the medication. At the same time the following pill may be administered:

R Creosote,  
Terpene,  
Iodoform, of each, gr. i.  
Take this pill three times a day.

#### TREATMENT OF APOPLEXY.

In *L'Union Médicale* for March 3, 1894, is an article in which the following advice is given. At the time of the attack there should be applied counter-irritation, in the form of mustard sinapisms to the lower extremities, and should the face be flushed and the arterial pressure high, and the patient robust, copious venesection to the amount of a pint should be resorted to. Should these conditions not exist, and there be evidence of very great arterial sclerosis, the physician may have to be content with the withdrawal of a small quantity of blood in the neighborhood of the mastoid. At the same time it is well to administer a laxative injection, which may be composed of fluid extract of senna, sulphate of sodium, and water, in the proportion of one drachm of fluid extract of senna, six drachms of the sulphate of sodium,

and enough water to make a pint. The efficacy of this injection may be increased by the addition of oil or glycerin. Should the respiratory function become disordered and the Cheyne-Stokes phenomenon appear, hypodermic injections of caffeine, ether, or camphorated oil should be employed. For the purpose of preventing future attacks or the first attack, it is suggested that patients who have atheromatous vessels should take moderate exercise each day, should rest after eating, and only take those articles of diet which are easily digested. The following mixture may also be administered:

R Iodide of potassium,  $\text{ʒiii}$ ;  
Bromide of potassium,  $\text{ʒiii}$ ;  
Distilled water,  $\text{ʒiv}$ .  
1 or 2 tablespoonfuls each day in milk.

Should there be indications that the cerebral trouble depends upon syphilis for its existence, a mixed treatment must be actively employed. Mercurial inunctions should be resorted to daily, using from 1 to 2 drachms of mercurial ointment each time. The iodide of potassium may be given in the dose of 1 or 2 drachms a day, divided doses, given in milk.

#### THE ACTION OF DUBOISINE UPON THE NUTRITIVE PROCESSES.

In a further study of the action of duboisine as a therapeutic agent, E. MARANDON DE MONTYEL (*Bull. de Thérapeutique*, February 28, 1894) publishes the details of twenty-five cases of mental disease in which the drug was employed. According to the results obtained, duboisine, though possessing good hypnotic and excellent sedative virtues, exercises untoward effects, such as *habitus*, gastro-intestinal disturbances, cardiac weakness, and malassimilation. The author formulates the following conclusions:

1. Duboisine has undoubtedly exercised on the subjects observed an action manifested in a faulty nutrition.

2. This deleterious action on nutrition has been produced independently of the gastro-intestinal troubles that the drug may cause; because, when given after meals, in the majority of cases, especially upon those cases of general paralysis and lypemaniacs, the administration of the drug, notwithstanding the integrity of the digestive tube, has been followed by the same deleterious action upon nutrition.

3. This action, other things being equal, is aggravated by disorders of digestion; but it occurs in those subjects that have never suffered from such troubles as well as in those

who are victims of gastro-intestinal affections, a proof that the action is independent of these disturbances.

4. This malassimilation under the action of duboisine seems to occur in connection with other disturbances, such as slowness of the circulation, and particularly a rise of the bodily temperature.

5. It is absolutely necessary, in order to combat this deleterious action of duboisine upon nutrition, to associate the drug with a tonic reconstructive *régime*. The medicament, therefore, should be given with caution to patients of feeble constitution, especially in those diseases characterized by decided nutritive deterioration, and in all these cases the employment of the remedy should not be prolonged.

6. General paralytics are the ones who suffer the least and the most from this peculiar action of duboisine; they furnish the greatest number of those that escape the action; and yet, on the other hand, of all demented patients those suffering from disorders of nutrition are the ones to exhibit the greatest loss of bodily weight.

7. All lypemaniacs, without exception, are susceptible to malassimilation from the action of duboisine, and this malassimilation, even after the administration of the drug has been suspended, continues and becomes more difficult to combat than in the case of general paralytics or those suffering from simple dementia. Therefore, although the loss of weight is not as decided as in cases of general paralysis, it may be said that the action of duboisine upon nutrition is manifested more particularly in cases of lypemania, and to a minimum degree in cases of simple mania.

8. In the large majority of cases the suspension of the drug is the beginning of a return of the patients to their original bodily weight, but, notwithstanding this, the mental excitement returns, placing the patients in much less favorable conditions. All this seems to prove that the deleterious changes produced in the nutritive processes have been the result of the action of the drug.

9. The subcutaneous injection of duboisine, even in doses of 4 milligrammes, and continued for a long time, never causes local troubles, neither in general paralytics nor in vesanic patients; quite large amounts of duboisine have been administered in a certain number of epileptics.

#### ERGOT IN THE TREATMENT OF PERIODIC NEURALGIA.

DR. THOMSON, of New York, reports in the *Medical Record* of March 17, 1894, four cases

of very severe periodic neuralgia in which the administration of ergot was followed by the most pleasing results after ordinary anti-neuralgic remedies had failed. He administers the fluid extract of ergot combined with an equal quantity of the elixir of cinchona, the latter ingredient being added to prevent nausea. Two teaspoonfuls of this mixture are to be taken in water as soon as the premonitory symptoms of headache are noticed, and the patient is directed to lie down and keep very quiet. If no relief follows in an hour, another dose may be given, and in another hour still another dose. Should the patient vomit the drug, it may be given as a rectal injection in two ounces of water. Careful attention to the condition of the alimentary canal is necessary between the attacks.

#### *BROMIDE OF ETHYL AND CHLOROFORM NARCOSIS.*

PROFESSOR PAWLOFF, in discussing the narcosis resulting from bromide of ethyl and chloroform, reached the following conclusions:

1. The narcosis comes on in a relatively shorter time,—about two minutes,—and the patient does not pass through a stage of excitation.
2. It requires a very small amount of bromide of ethyl—about five grammes—to bring about full anæsthesia.
3. The narcosis is not attended by any disagreeable manifestations.
4. A small amount of chloroform is needed to keep the narcosis up.
5. There follow no bad after-effects.

About 16 grammes of the chloroform is required to keep up the narcosis for fifteen minutes.—*Medical Record*, March 17, 1894.

#### *THE TREATMENT OF URÆMIA.*

In the *New York Medical Record* for March 17, 1894, DR. BEVERLY ROBINSON contributes a valuable paper upon this topic, in which he reviews the various therapeutic resources for the combating of this condition.

After mentioning the value of cardiac stimulants, of diaphoretics, and of the external application of heat, he strongly urges the employment of venesection during the presence of convulsions or when they are imminent, and states that these manifestations will sometimes disappear even while the abstraction of blood is going on. In strong, robust patients he suggests the withdrawal of from twelve to twenty ounces of blood. He believes that many lives are saved by this measure, and cites

one case in which the most favorable results followed this method of treatment.

The patient, who was found unconscious in the street, and who had a uræmic convulsion on the way to the hospital, was profusely bled to the extent of two pints. Immediately after the bleeding, saline transfusion of two quarts of freshly-made salt solution was performed, using the opening in the vein from which the blood had been drawn. The injection seemed to work like a charm, for no sooner was it terminated than the patient's limbs began to move, his face appeared normal, and twenty minutes after the transfusion the patient was able to speak clearly and to remember events which occurred before his attack. Dr. Robinson therefore believes that, wherever it is possible, copious venesection, followed by intravenous injections of saline solutions, or of hypodermoclysis, should be resorted to, and if these are not possible, that enteroclysis be used. Should the patient be apparently moribund and collapsed, he may require hypodermic stimulation with extract of coca, strychnine, or ether. The preparation of coca which he employs for this purpose is prepared in the following manner: To four ounces of the fluid extract of coca add one ounce of glycerin, heat upon a water-bath until all alcohol has been driven off, and then add sufficient water to make the product measure two fluidounces. For the relief of the convulsions, before venesection can be resorted to, chloroform may be employed. The use of pilocarpine for the production of sweat he regards with suspicion.

In the discussion of Dr. Robinson's paper, Dr. Peabody strongly recommended urethane for the treatment of the convulsions. The drug is to be given by subcutaneous injection, and as it is a harmless remedy and easily absorbed and quite unirritating and painless, he thinks it should be frequently employed. His statement was corroborated by Dr. Kinnicut, who advises that the drug be given in very large doses, amounting to three or four hundred grains in twenty-four hours. Dr. Kinnicut thought that urethane would control almost all forms of convulsions after other remedies had failed.

#### *THE PREVENTION OF CRACKED NIPPLES.*

The *Lancet's* Paris correspondent says, "The direct relation of mammary abscess occurring during the period of suckling and excoriations of the nipple is now fully admitted. Many mothers object to suckling their infants on account of the dread of this complication. Artificial feeding with its frequent failures is then

resorted to, and the child suffers. Antiseptic washing of the nipples has greatly diminished the frequency of abscess of the breast, but cracked nipples continue to be of common occurrence. For the last ten years Professor Pinard has been in the habit of advising nurses as a matter of routine to keep the nipples covered with a compress saturated with a solution of boric acid. This precaution has had the effect of markedly diminishing the frequency of lymphangitis, but instances of an increase of temperature in young mothers due to microbial infection of the nipples are still numerous. M. Lepage strongly recommends that the nipples should be regularly washed with the following solution: Red iodide of mercury, 10 to 20 centigrammes (2 to 4 grains); spirit of wine, 50 grammes (1½ ounces); glycerin, 500 grammes (1 pint); distilled water, 450 grammes (1 pint). If, after using this for a few days, the ulceration disappears, substitute a solution of boric acid. Any crack that may develop is covered with tarlatan moistened with the mercuric solution. The following figures appear to confirm M. Lepage's good opinion of the comparative value of his method. In three hundred and thirty-one cases of lying-in women whose breasts were treated by the Pinard method there was an increase of temperature in sixty-seven, the corresponding figures in M. Lepage's cases being twenty-three out of four hundred and forty. Moreover, the healing of the cracks is said to be expedited and the pain greatly diminished by the mercurial treatment."—*New York Medical Journal*, March 17, 1894.

#### COMPRESSION OF THE PHRENIC NERVE AS A THERAPEUTIC MEASURE.

The *Journal des Praticiens* for February 10 contains a letter from its Marseilles correspondent, in which its readers are reminded that seven or eight years ago Dr. Bidon conceived the idea of assuaging hysterical spasm of the glottis by exerting digital compression on the phrenic nerve between the heads of the sterno-cleido-mastoid muscle. After that, Leloir advised this procedure as a means of checking hic-cough. Now, M. Bidon suggests it afresh as a remedy for spasm of the glottis in persons suffering with tabes. The following is a summary of a case thus treated: The patient, a man thirty-eight years old, complained of fulminant pains, incontinence of urine, and muscular weakness, and showed Westphall's and Argyll-Robertson symptoms. Every ten minutes he was attacked with vertigo, weakness in the legs, a half-fainting condition, and a sensation of suf-

focation. M. Bidon compressed both phrenic nerves with the fingers. The spasm ceased and the difficulty in breathing disappeared, but only provisionally and for a few minutes after the compression. The use of the measure was persevered in, and in eight days the cure was lasting. "How," asks the correspondent, "is this phenomenon to be interpreted? By a paralyzing action on the diaphragm, or by an inhibitory action on the nervous centres in such manner as to suspend spasm of the constrictor muscles of the glottis, or by direct compression of the laryngeal muscles?" He does not attempt to answer the question, but he remarks that the fact is memorable from a clinical point of view.—*New York Medical Journal*, March 17, 1894.

#### THE DIETETIC TREATMENT OF PHTHISIS.

H. P. LOOMIS, in the *New York Medical Record* for March 24, 1894, in an article upon this subject, says that he is firmly convinced (as are all physicians, for that matter) that diet is a most important element in the prophylaxis of phthisis, and that therefore the regulation of the diet is a most important part of treatment.

Milk should never be taken in quantities exceeding eight ounces at a time, and then should be swallowed slowly during ten or fifteen minutes. When several quarts are drunk in twenty-four hours, lime-water must be added, in the proportion of a tablespoonful to eight ounces. One of the most palatable ways in which milk can be administered is scalded, with Seltzer-water added. This mixture is especially refreshing in the early morning.

Some patients cannot take milk, either from a personal idiosyncrasy or enfeebled digestive powers. To such persons kumyss or matzoon can be given with great benefit.

Where the digestive powers are especially weak, peptonized milk can often be assimilated in large quantities, but the objection to its prolonged use is, that after a time its taste palls upon the appetite. Two to four quarts should be taken in twenty-four hours. The manner of serving it is not unimportant. To some it is more palatable cold, to others hot. In the majority of cases it should be taken slightly warmed (100° F.).

When the different methods indicated all fail, then attention must be given to the gastrointestinal mucous membrane. Potations of hot water (aerated in some cases), from half a pint to a pint one hour before meals, must be tried. If this also fails, disinfection of the alimentary

canal is indicated, and for this creosote is one of the best agents we have.

Meat can be given cooked rare, or, better still, when large quantities are to be taken, in the form of squeezed beef-juice. To obtain from the meat the maximum amount of juice, a meat-squeezer is absolutely essential. There are a number of good ones in the market, which range in price from one to three dollars. The best kind of meat from which to squeeze the juice is a thick round steak free from fat. This should be seasoned with pepper and salt, broiled over a brisk fire, then cut in pieces two inches square, and then put into the meat-squeezer. About eight ounces of juice can be obtained from each pound of meat. No heat can be applied to the juice, as the albumin would be at once coagulated and the juice rendered worse than useless. If the juice becomes cold and it is advisable to heat it, this can be best accomplished by placing the cup in hot water. It is necessary to go fully into the preparation of the beef-juice, because of its importance as one of the most essential items in the diet of phthisis. Freshly-squeezed beef-juice is the best of the artificial preparations of meat known, and the trouble of preparing it is well repaid by the marked improvement in the patient. Beef-tea should never be given in phthisis as an article of diet. The popular idea that it is nourishing is erroneous. Another nutritive and palatable method of preparing meat is in the form of scraped meat-balls. The pulp is scraped from a round steak, either by a fork or by a meat-scraper. This leaves the fibrous material behind. The scraped meat is rolled into small balls and broiled over a quick fire, and served hot with pepper and salt or Worcester-shire sauce.

Scraped meat may also be given raw, spread between thin layers of bread. To some this is a very appetizing method. Many of the meat-powders on the market prepared specially for feeding furnish us valuable aid. A preparation from which the writer has seen marked benefit is the beef peptonoids; also an excellent meat-powder can be prepared in the kitchen by cutting boiled beef into fine pieces, drying by means of a water-bath, and grinding in a coffee-mill with the teeth set closely. [The editor has found beef meat and beef cacao of great value in these cases.] The method of administering these meat-powders can be varied almost indefinitely. The powders can be added to soups, broths, milk-punch, milk, and may be taken in cold or warm water. The object in preparing the meat in the various ways suggested is to give the largest amount

of albuminoids in the smallest compass, in the most palatable form, and in a way that will not disturb the stomach. He has known cases of phthisis to live for months on nothing but milk and meat prepared as above, and gain steadily in flesh and strength.

Next in order to meat and milk as foods come stimulants and cod-liver oil.

It can scarcely be questioned that in consumption alcohol is beneficial. Some attribute to it distinct curative power, and would recommend it in all stages. In the reporter's opinion it is one of those remedies which is capable of doing good, if judiciously used, while at the same time it is quite as liable to do positive harm. It should never be used in the first stage; in the second stage only in small quantities with food, and preferably in the form of milk-punch in the forenoon and on retiring. In the third stage is where it appears to do the most good, when taken in small quantities and repeated at regular intervals. In many cases, in all three stages, a glass of ale or porter twice a day with the meals improves the appetite, aids the assimilation of food, and causes marked increase in weight. For prudential reasons, often it is advisable to disguise the alcohol when given for any length of time. The combination of alcohol with milk, malt, cod-liver oil, or glycerin is theoretically, as practically, more advantageous than its separate ingestion.

It is well known that muscle-fibre is a loose combination of albumin and fat, and that fat is a component factor in all muscular histogenesis. So in phthisis fat is necessary to the building up of health and tissue, and the dietary should be as rich in fat as the assimilative powers of the patient will allow. The greatest evidence of the value of fat in the food of phthisical patients is furnished by the universal confidence placed in cod-liver oil as a curative agent. It is only the best form of fat because it is the most easily assimilated of all, and can frequently be absorbed when no other fat can be. Nature supplies an oil emulsion in milk, and this largely explains its excellent effects. Cream may be used when it is desirable to introduce fat into the system. It has, however, to be given with care, as in many persons it produces dyspeptic symptoms, which may often be obviated by taking it with a little liquor, as maraschino or Chartreuse, or mixed with aerated water, in the proportion of a teaspoonful to a glass.

Albuminoids and carbohydrates should form the basis of the three principal meals. Meat should be eaten rare and with all meals. If the

patient is over thirty years old, a large amount of meat is essential and can be more easily taken. Two pounds of beef, at least, should be eaten in the twenty-four hours, or its equivalent in beef-juice. If poultry is served, the dark meat is preferable to the white. Sweetbreads are often tempting and may assist digestion. Soft-boiled eggs for breakfast are advisable. A raw egg sucked from the shell will often relieve an irritable condition of the pharynx. Butter should be freely used. Cream on cereals, or diluted with Seltzer-water, is of benefit in certain cases.

Milk should constitute the principal drink, and should be ordered between each meal, also a glass or more with the meals. In this way from two to three quarts can be taken in the twenty-four hours. To avoid monotony, the articles of diet, such as vegetables, etc., ordinarily taken with meals, should not be restricted, except that all indigestible articles, as rich pastries and sweets, should be avoided. The starchy and farinaceous foods should be taken sparingly. While the diet is largely nitrogenous, a sufficient proportion of carbohydrates must enter into it. Fats and oils, especially from the animal kingdom, will furnish this. Butter should be freely used.

Cod-liver oil, which is really not a medicine, but a food, should be taken in  $\frac{1}{2}$ -ounce doses after each meal; whether directly after the meal or after a half-hour interval must be decided according to the personal idiosyncrasies of the patient. When it is impossible to give the pure oil on account of its taste, or because it causes indigestion or eructation, it is wise to give an emulsion of cod-liver oil, pepsin, and quinine, which can be readily taken by almost any one. Often the pure oil can be taken when floated on whiskey. During its first stage the phosphates are valuable, and it is advisable to give food which, owing to the presence of phosphates, is desirable. However, it must be remembered that to supply the phosphates in sufficient quantities, special preparations must be made use of. The hypophosphites should be given after meals, diluted in water. In certain cases they are even more valuable than cod-liver oil.

*Second Stage.*—This is the period which will most try the physician's patience, and is the one in which systematic diet is absolutely essential. The relief from coughing, fever, and digestive disturbances experienced by this class of patients in following the dietetic regimen prescribed is of great help to the physician, as a guarantee that his directions will be implicitly followed.

In this stage the diet varies rather in the methods of preparing the food than in the food itself. The patient is still fed six times a day, but the meals are restricted. All foods should be offered in the most palatable form and generally given finely subdivided. This is the stage when beef-juice and scraped beef are specially indicated. A small glass of the former in the middle of the forenoon and afternoon, with a cracker and a scraped meat-ball or raw-meat sandwich for lunch or dinner, will materially aid nutrition. In many cases a glass of porter or ale with lunch or dinner will be of great benefit in increasing appetite and adding flesh.

Milk plain, with lime-water, or boiled should be given early in the morning, at bedtime, and between meals; but this should never be taken at the same time with beef-juice. When milk disagrees with patients, kumyss should be substituted, to the amount of three or four bottles a day. With the exception of the malt liquors with meals, stimulants during this stage are apt to do more harm than good. Cough mixtures should never be taken, if they can possibly be avoided. The syrups and narcotics which they contain are almost certain to produce digestive disturbances, in spite of the most rigid dieting. Cod-liver oil will be required, but the greatest care must be used in its administration. The emulsion spoken of in the first stage will often be assimilated without any trouble. Especially in patients in middle life, the pure oil with whiskey will give the best results. Other cases can take cod-liver oil in capsules.

Some of the most important rules which should govern the dietetic treatment of phthisis may be formulated as follows: 1. Never take cough mixtures if they can possibly be avoided. 2. Food should be taken at least six times in the twenty-four hours; light luncheons between the meals and on retiring. 3. Never eat when suffering from bodily or mental fatigue or nervous excitement. 4. Take a nap or, at least, lie down for twenty minutes before the mid-day and evening meals. 5. The starches and sugars should be avoided, as also all indigestible articles of diet. 6. As far as possible, each meal should consist of articles requiring about the same time to digest. 7. Only eat as much as can be easily and fully digested in the time allowed. 8. As long as possible, systematic exercise should be taken to favor assimilation and excretion; when this is impossible, massage or passive exercise should be undergone. 9. The food must be nicely prepared and daintily served; made inviting in every way. The following may serve as a

sample of a diet-sheet in the early stages of phthisis:

*On Awakening.*—Eight ounces of equal parts of hot milk and Seltzer, taken slowly through half an hour.

*Breakfast.*—Oatmeal or cracked wheat, with a little sugar and an abundance of cream, rare steak or loin-chops with fat, soft-boiled or poached egg, cream toast, half-pint of milk, small cup of coffee.

*Lunch, 10 A.M.*—Half-pint or small teacup of squeezed beef-juice with stale bread; 12 M., rest or sleep.

*Mid-day Meal, 12.30 P.M.*—Fish, broiled or stewed chicken, scraped meat-ball, stale bread and plenty of butter, baked apples and cream, two glasses of milk.

*Lunch, 4 P.M.*—Bottle of koumyss, raw scraped-beef sandwich or goblet of milk; 5.30 P.M., rest or sleep.

*Dinner, 6 P.M.*—Substantial meat or fish soup, rare roast beef or mutton, game, slice stale bread, spinach, cauliflower, fresh vegetables in season (sparingly).

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*NAPHTHOLATE OF SODIUM (MICROCIDINE) AND TRICHLORACETIC ACID IN EAR- AND NOSE-WORK.*

In the November number of the *Annales de l'Oreille*, COZZOLINO, of Naples, highly commends the product of the action of sodium hydrate upon  $\beta$ -naphthol, as furnishing one of the most valuable antiseptic and curative medicaments for the control of suppurative processes. It is odorless, unaltered by contact with instruments or tissues, soluble in water in the proportion of one to three, forming a brownish solution when strong, but is alkaline in reaction, and nearly colorless and tasteless in the usual three-to four-per-cent. solution. The powder should be kept from the light, but the solutions demand no precautions. Experience in other medical fields has shown the three-per-cent. solution to be as efficacious as 1 to 2000 sublimate solutions, and in the ear Cozzolino has found it twice as prompt in ending suppuration as boric solutions, using it by irrigation to secure full washing away of all discharge. In the nose he employs it in .5- to two-per-cent. solution or in a weak ointment, and claims brilliant results for it here, as well as in tonsillar troubles.

In another article, Cozzolino warmly commends trichloroacetic acid as the best hæmodynamic in epistaxis arising, as such bleedings usually do, from the cartilaginous septum. He employs generally a pledget of cotton soaked

with one-per-cent. or 1.5-per-cent. solution, and claims slight reaction and prompt cicatrization as the result, far surpassing that following chromic acid or iron preparations.

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*TREATMENT OF CONJUNCTIVITIS.*

SCHWEINITZ (*Philadelphia Polyclinic*, April 7, 1894) thinks that in the treatment of acute and subacute simple conjunctivitis the following points should receive attention:

1. Removal of the probable cause.
  2. Protection of the eyes with dark glasses or a shade, but *never the application of a poultice.*
  3. Exposure of the surfaces which are inflamed by eversion of the lids and bringing into prominence the retrotarsal folds, and spraying the affected areas with a mild antiseptic solution, preferably boric acid and common table salt.
  4. The application of nitrate of silver in the usual manner once a day, if there is much secretion. If there is not much secretion or swelling, and the inflammation becomes subacute and tends to be stubborn, the use of an astringent, such as alum, or tannin and glycerin, and of a collyrium of biborate of sodium, instead of boric acid.
  5. The frequent washing of the lids and surrounding areas with warm water and Castile soap.
  6. The administration of the internal medication which is indicated, particularly quinine, which has a good effect in checking the disease.
- Associated inflammation in the naso-pharynx or surrounding facial area—as, for example, eczema, impetigo, and similar conditions—necessarily requires attention and treatment, and the relation of refractive anomalies to the disease should always be determined.

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*THE TREATMENT OF BLEPHARITIS MARGINALIS BY HYDROGEN DIOXIDE.*

S. C. AYRES (*Medical News*) strongly recommends the use of hydrogen dioxide in the treatment of blepharitis. The method of application is as follows:

The larger crusts should first be removed or scraped off, after having been softened by tepid water. Then a little cotton is wrapped tightly around a Japanese toothpick, which is dipped into the dioxide in a little dish. The cotton is then swept over the entire edge of the lid. The characteristic bubbling will follow, and the application is repeated until the bubbling ceases. The ulcers will then present a whitish

appearance. If care is taken, and the cotton is not too freely saturated, none will come in contact with the conjunctiva. In order to obviate all pain, a few drops of a four-per-cent. solution of cocaine can first be instilled into the eye. This treatment should be repeated every day. The remedy is one that any intelligent person can apply at home, and one from which there is no danger. Dr. Ayres's experience with the use of salves and ointments is somewhat disappointing. They often cause unaccountable irritation, and on this account are unreliable. In the method advised a clean remedy is used, which acts promptly and efficiently. By its chemic action it destroys the germs which cling so closely to the edges of the lids. It is not a cure-all or a specific, but he certainly has had the happiest results from its use.

*THE VALUE OF HOMATROPINE AND  
COCAINE DISKS AS SUBSTITUTES  
FOR ATROPINE, DUBOISINE,  
AND HYOSCINE.*

CASEY WOOD (*Ophthalmic Record*, March, 1894), as the result of additional experiments, reaches the following conclusions, some of which are modifications of the propositions contained in his first research on this subject:

1. If two gelatin disks, containing  $\frac{1}{10}$  grain each of homatropine and cocaine, be placed in the conjunctival sac at an interval of twenty minutes, *the eye being all the while kept closed*, the ciliary muscle will in most instances be found to be fully paralyzed in from seventy to one hundred minutes after the introduction of the first disk.

2. In persons under twenty-five years of age, or whenever ciliary spasm is suspected, the best results are obtained by the use in another twenty minutes of a third disk, or one containing  $\frac{1}{10}$  grain of homatropine alone, the examination in that case being best made between ninety and one hundred and twenty minutes after using the disk. The first two disks containing cocaine are sufficient to furnish the chief advantage which, in his opinion, resides in that alkaloid,—namely, of increasing the absorbing powers of the cornea for agents combined with it, while the increased dose of homatropine produces a more thorough relaxation of the ciliary muscles.

An eserine disk ( $\frac{1}{1000}$  grain) inserted the following morning will enable the patient to do near work within an hour or two.

3. The disks should be inserted on the tip of a damp camel's-hair brush, and should al-

ways be applied to the ocular conjunctiva at its inferior and outer surface, the patient looking up and in, while the lower lid is drawn down. Any adherent or sticky gelatin may be easily wiped off the palpebral edges with a damp cloth or a piece of wet absorbent cotton.

*PRACTICAL POINTS IN TREATING DIS-  
EASES OF THE EYE, EAR, NOSE,  
AND THROAT.*

J. WALTER PARK (*Journal of the American Medical Association*, April 7, 1894) calls attention to the importance of attending to the nasal lesions in phlyctenular keratitis, believing that if the eyes alone are treated and the nose is neglected, there will be persistent relapse.

He entertains a most favorable view of the removal of the ossicles and tympanic membrane for chronic suppuration of the middle ear, believing that when there are no mastoid complications, eight out of every ten cases of from six months' to three years' standing, that have resisted all other forms of treatment, recover if the operation is properly performed. In all acute and chronic suppurating ears pyoktanin is recommended, as it will often arrest the discharge quicker than boric acid, if it is always used in fresh solutions, not over three to five days old. Park employs it in 1 to 500 strength, and believes it has a more lasting effect in the destruction of pus-germs than peroxide of hydrogen.

In the treatment of nasal troubles he recommends fluid petroleum, combined with various antiseptics, as an excellent medicament to prevent crust-formations, believing that the fluid petroleum is better adapted for the mucous membrane of the nose than albolene or benzoïnol.

*THE TYMPANIC COMPLICATIONS OF  
CHILDREN'S DISEASES.*

A valuable communication is made by RASCH, of Copenhagen, in *Hospitals-Tidende*, Nos. 18 and 20, 1893, of the results of sixty-one autopsies of children under two years of age. In but five cases was the tympanum normal, suppurative disease being present on one or both sides in forty-six, equalling seventy-five per cent., and catarrhal lesions in eight cases, or fourteen per cent. Nearly all of the children who had died of broncho-pneumonia showed otitis, and in thirty-three of the forty-three in which the secretion was rigidly examined the pneumococcus was present. Not a few of these children had shown symptoms leading to a diagnosis of meningitis, which was found absent on sec-



tion, and the tympanic inflammation had been generally overlooked. Perforation of the drum-head was found but four times, and even when this occurs, the condition is too frequently unrecognized or slighted.

This is only a confirmation of what has been long urged and repeatedly demonstrated by otologists, but they too often are merely regarded as magnifying their office unreasonably. Numbers of such cases recover from the general disorder without recognition of the middle-ear disease, and give no evidence for a time that resolution has not been complete there; but the otologist finds a really normal drum-head a rarity, and must frequently trace later-coming deafness to such beginnings. This is the more deplorable when measures as simple as hot douching of the ear will often suffice to cure the disease in its early controllable stage; and a careful use of the Politzer inflation has at times instantly dispelled the symptoms of meningeal involvement, which delay might have made organic and irremediable.

#### TRICHLORACETIC ACID AS AN IDEAL CAUTERANT.

The January, 1894, *Monatsschrift für Ohrenheilkunde* contains an enthusiastic paper by Von Stein, of Moscow, in furtherance of his primary claims for this medicament. Some of the advantages urged can hardly be claimed for anything else, and the methods seem to deserve full trial. Admitting that it is more painful than chromic acid and less vigorous than galvanocautery, he differentiates the non-fibrous hypertrophies as the true field for its use as a cauterant; but claims, as the result of clinical and laboratory experience, to have demonstrated that it is an adjuvant of the greatest value to the other forms of cauterization, increasing the efficiency and lessening the reaction. The application of the crystals or concentrated solution to a bare or eschared surface prevents all putrefactive changes, almost wholly does away with febrile consequences, and promotes rapid, comfortable healing. Further, his employment of it in ozæna cases has not only speedily controlled the odor, reduced crust-formation, and hastened improvement, but has even led to so decided a hypertrophic tendency of the sclerosing surfaces as to demand at times reduction by decided cauterization. In acute coryza he has employed weak solutions (1 to 1000 to 2000) by instillation or spray, with prompt and safe resolution after the brief increase of secretion, and otitic consequences have seemed especially rare in cases thus antiseptically treated.

He cautions against strong applications until the tolerance and inadequacy of weaker solutions have been proved; and others will do well to be more conservative than he now is, since he sometimes insufflates crystals into the Highmore or ethmoid sinuses. While the conditions which he selects for its use as a cauterant seem those in which still milder measures would succeed, and his view is generally rather roseate, trichloracetic acid would seem to have a special place as an aid in other cauterizations, and may prove our most valuable medicament in combating the obstinate ozænatous conditions.

#### INTUBATION OF THE AUDITORY CANAL FOR STENOSIS AND FURUNCLE.

In the *Annales de l'Oreille*, etc., for December, DR. COURTADE reports some very satisfactory results in the treatment of inflammatory stenosis of the meatus by the elastic pressure of a short piece of rubber tubing, and claims exceptional value for the method. The idea of elastic pressure is undoubtedly good, and his means of applying it often the best possible. Pressure has been the reviewer's main dependence for the promptest possible relief of the pain and its exciting inflammation, although it may seem rather paradoxical to fight pressure-pain by pressure; yet the relief is rarely slow of attainment, extension is lessened, if not prevented, and the unknown and perhaps serious condition in the depths of the canal is promptly made accessible to study and treatment. Only when the stenosis is accompanied by a deeper suppuration, which may not be safely clogged by a tampon in the canal, does a tubular compress offer a radical advantage, for the conical wedge of cotton, well covered with the yellow-oxide ointment, serves to gently and persistently afford the desired compression and rub in the medicament with every motion of the parts, as in each movement of the jaws. The germ theorists will find no better germicide for the purposes of disinfection than this affords, while it is admirably stimulant and resolvent.

In the majority of the cases of stenosis other than furuncular, there has been, and often still persists, a suppuration of the tympanum, and sealing of the meatus may then be precarious. Tubes have then their great advantage, though not exactly for Courtade's reason, that cleansing cannot be adequately done by more ordinary methods. One who knows how to properly syringe the auditory canal (it is a pity and a shame that so few do) need have little difficulty in fairly douching the whole canal. A small speculum gently used as a dilator will

overcome almost any inflammatory swelling which does not demand operation, and the syringe can be used with full effect. To maintain the dilatation a tube may be well employed, and the soft elasticity of caoutchouc may surpass a quill or other rigid tube. Dr. Courtade makes no mention of the device—sometimes very valuable—of stretching the tube in introducing it, so as momentarily to reduce its volume; then its expanding tendency is far more powerful, as it needs to be when the stenosis is annular, firm, and fibrous. This may be accomplished by passing long, delicate forceps through the tube to grasp the farther end, and exercising firm traction upon the nearer end until the other is well beyond the stricture. The hour-glass form of the compressed tube serves then the additional valuable purpose of anchoring it securely at the desired place until the reduction of the swelling sets it free. Too hasty removal of the tube or compress may easily permit relapse.

#### TREATMENT OF CANCER OF THE STOMACH.

PRIEUR (*La Tribune Médicale*, No. 12, 1894) holds that three drugs are particularly efficacious in the treatment of cancer of the stomach,—condurango, sodium chlorate, and aristol.

Condurango has been known since 1871 as a remedy in the treatment of cancer. Friedreich reported a surprisingly rapid action. Rees, later, out of fifty cases, could not fairly attribute any beneficial effects to the drug, excepting in three cases. This medicine may be administered in the form of the wine, a tablespoonful five or six times a day shortly before meals, or the tincture may be employed, a teaspoonful three times a day. Although this drug has no specific action, its influence upon the appetite and upon the digestion is sufficiently marked to justify its use in the treatment of cancer.

Chlorate of sodium has recently been recommended by Brassaud. He gave it in doses of from 2 to 4 drachms, and, as a result, noted cessation of hemorrhage, increase in weight, diminution in swelling, cure of vomiting, and return of appetite. One patient gained twenty-five pounds in six weeks. Albuminuria must be considered a contraindication to the use of this drug. Aristol, in doses of 1 to 2½ grains daily, is used simply as an antiseptic.

The symptomatic treatment of cancer is also of great importance. Alimentation should receive first consideration. A vegetarian diet which minimizes the work of the stomach

sometimes serves an excellent purpose. As a rule, meat is not borne by these patients. White meat of fowl, fish, and soft-boiled eggs can, however, often be taken. Milk is nearly always well borne. When this begins to fail, koumyss should be substituted. Nourishment administered three times a day is sufficient. Frequent administration of small quantities simply increases suffering.

Since the stomach contains no hydrochloric acid, this should be administered by the mouth half an hour after meals as a digestive, and as an antiseptic when the stomach is empty,—that is, in the morning on rising and in the evening on retiring. Bicarbonate of sodium may be given, but always in small doses and before meals, since, thus administered, it increases the secretion of gastric juice. If given after meals in full doses it diminishes the secretion. When ulceration takes place, the administration of hydrochloric acid must be dropped and pepsin and pancreatin given. To combat the anorexia, condurango should be tried first, this failing, simple bitters are indicated. Thus, the following formula may be given:

R Nux vomica, ℥ss;  
Chloroform, ℥ss;  
Tincture of gentian, q. s. ad ℥iii.  
Sig.—℥i three to six times daily before meals.

Or chloroform may be given in 20- or 30-drop doses. It should be administered half an hour before meals.

Vomiting, when it is reflex and irritative, as in the beginning of the affection, is treated by cocaine or morphine. These drugs are given according to the following formula:

R Morphine hydrochlorate, gr. iv;  
Cherry-laurel water, ℥iv. M.  
Sig.—5 drops is required.

Or,

R Morphine hydrochlorate,  
Cocaine hydrochlorate, of each, gr. iv;  
Cherry-laurel water, ℥iv.  
Sig.—5 drops is required before meals.

If the vomiting comes from dilatation of the stomach or atony, full doses of strychnine should be administered. When from imperfect digestion, meat should be dropped from the diet and hydrochloric acid and pepsin given. When vomiting comes from obstruction, lavage of the stomach represents the best treatment. Properly carried out, it gives great relief to symptoms and prevents dilatation. Often following the washing out of the stomach the patients will gain from ten to twenty pounds. One- to two-per-cent. solution of chlorate of sodium, one-half-of-one-per-cent. solution of

salicylic acid, or two-per-cent. boric-acid solution may be employed. Contraindications to lavage are hæmatemesis, gastrorrhagia and acute inflammatory symptoms, and profoundly-marked cachexia.

When alimentation is rendered absolutely impossible, nutrient enemata should be administered. The lower bowel should first be emptied by a large injection. All injections administered should be digested or at least contain digesting materials. Thus, if milk is employed, the water and salts alone are absorbed. Experimentally it has been determined that if two dogs are starved and one is given copious injections of broth or soup and the other nothing, they will both perish at about the same time.

Schmitt advises defibrinated blood one-quarter of a pint at a time. Flint orders a little over a pint of a mixture made up of finely-chopped beef, 300 parts; fresh pancreas, 50 parts; and water, 200 parts. A quarter of this is given each time.

As to surgical intervention, Billroth, who has a record of twenty-eight pylorectomies, records two cases of survival, one four and a half years after operation, the other two and a half years after.

The author states that, even if the surgeon successfully removes a cancer, and this is not followed by recurrence, the atrophy of the mucous membrane which always accompanies this growth progresses, the absence of the hydrochloric acid persists, and the patient dies of degenerative lesions of the stomach.

#### TREATMENT OF CHRONIC URETHRITIS.

LYDSTON (*Journal of Cutaneous and Genito-Urinary Diseases*, No. 139, vol. xii.) holds that by far the greater proportion of cases of gleet require anterior internal urethrotomy. When the patient objects to the operation he should be informed that all other measures are in the nature of a compromise.

When the inflammation is localized in the bulbo-membranous portions of the urethra, topical applications are necessary. He prefers a syringe holding half an ounce and the ordinary Ultzman instrument, using, of course, solutions of nitrate of silver of comparatively feeble strength.

The passage of a steel sound is to be commended, but copious antiseptic injections represent by far the best method of treatment of both anterior and posterior inflammation. The strength is varied according to the individual tolerance. In order of merit he places perman-

ganate of potassium, nitrate of silver, and bichloride of mercury. The permanganate is used in the strength of 1 to 5000 to 1 to 15,000; nitrate of silver from one-half to one per cent. These irrigations are made by means of a short urethral nozzle. Rheumatic, gouty, and syphilitic diatheses must always receive appropriate general treatment. Certain cases are practically incurable. Sometimes absolute cessation of treatment is the best possible procedure that can be advised.

#### TREATMENT OF GONORRHOEA IN WOMEN.

LUTHER (*Sammlung Klinischer Vorträge*, Nos. 82 and 83), after a careful review as to the etiology, symptomatology, and pathology of gonorrhoea in women, proposes the following prophylactic measures:

Regulation of prostitution; legislation by which all professional harlots should be required to live in buildings provided for the purpose. A change in the method of examining women. Compulsory examination of all men coming to a brothel; enforced punishment of all who, knowing they are suffering from venereal disease, expose another person to contagion without a certificate of health from a reputable doctor. The right of summoning physicians to testify as to sexual infection, excepting when this takes place in the marital state. Requiring the monthly nurse, in virtue of her authority, to report all venereal diseases of which she becomes cognizant, except when they occur in the persons of married women. The organization of a corps trained in methods of scientific examination, and especially in instruction of the monthly nurse as to diagnostic signs; release of the medical commissioner from the performance of the duties of a doctor.

These highly practical methods of prevention would scarcely be proposed from other than a German source.

#### CASE OF EPILEPTIFORM TRIGEMINAL NEURALGIA TREATED BY HORSLEY'S OPERATION FOR NEURECTOMY OF THE INFERIOR DIVISION OF THE FIFTH NERVE.

MAYO ROBSON (*British Medical Journal*, No. 1716) reports the case of a publican of the age of sixty, who suffered for fifteen years from severe agonizing paroxysms of pain shooting down the right side of his face in the course of the inferior dental nerve. The paroxysms

only lasted about half a minute, but recurred generally about every half-hour or at longer or shorter periods, and were brought on by eating or at times even by talking. He had his teeth removed on the advice of his doctor, and took various medicines at the hands of several medical men, without any real relief. Seven years ago Mr. Robson divided the inferior dental nerve from the inside of the mouth, which operation completely relieved him for two years. The attacks then recurred after exposure to cold, and soon became as severe as before. He was readmitted into the infirmary, when the lower jaw was trephined by Robson opposite the last molar tooth, and half an inch of the right inferior dental nerve removed, giving complete relief for four years, or until eight months ago, when the attacks returned after exposure to cold and damp.

He was readmitted January 26, 1892, suffering from severe paroxysms of pain in the right side of the face, not only shooting down in the course of the inferior dental nerve, but radiating all over the right half of the face. They lasted about twenty seconds, occurred on an average every quarter of an hour, and were brought on by eating and talking.

In the early part of February another operation was performed. Incision was made a little above the upper border of the zygoma, extending forward for about an inch and a half, another downward from this behind the ascending ramus of the jaw, and another from the angle of the jaw along the lower border for about an inch. The flap thus marked out was reflected with the subjacent fat; the branches of the seventh nerve and the parotid duct were exposed, and the interval between them defined. The fascia was then divided, the gland pushed aside, and the masseter muscle exposed. The fibres of the masseter were divided transversely, so far as they were in the way, and retracted. The periosteum was then raised from the subjacent bone, the sigmoid notch and its boundaries well defined, and all bleeding stopped. A  $\frac{1}{2}$ -inch trephine was used, and a piece of bone taken out of the jaw just below the notch, so as to deepen it; a second piece was then removed, and then a third, and on it was found the groove for the entrance of the inferior dental nerve. On sponging out the cavity and getting the wound as dry as possible, the nerve could be seen lying at the bottom.

An attempt was made to ligature the internal maxillary artery, but, on account of its great depth, this was found impracticable, hence pressure-forceps were applied and left

on. It was not necessary to divide any extensive portion of the internal pterygoid muscle. The nerve was grasped with a pair of pressure-forceps and drawn downward, when a piece three-eighths of an inch in length was removed from just beyond the foramen ovale. The wound was well washed out with hot lotion (1 to 4000 perchloride of mercury solution), stitched up with silkworm-gut above and below, and left open in the middle for the forceps. Stitches were inserted into the middle of the incision, but were left untied until the clips could be removed. The wound was dressed with cyanide gauze and antiseptic wool. The pressure-forceps were removed the next day, when the loose sutures were drawn up and knotted. The stitches were removed on the tenth day, and the patient returned home on the twenty-seventh day quite well, having had no return of pain since the operation, the parts supplied by the inferior division of the fifth nerve being devoid of sensation.

#### *A CASE OF ENTERECTOMY FOR GAN- GRENOUS BOWEL.*

The following case is reported by PAUL (*British Medical Journal*, No. 1727, 1894) to refute the objection urged against his operation, that it would not always be possible to invaginate the enlarged proximal end of the bowel into the distal shrunken end, and in such cases would therefore be useless. He believes it unimportant which way the bowel is invaginated, though the downward method should probably be preferred when feasible.

S. R., aged fifty-one, came under his care at the Royal Infirmary on June 20, 1893. She was a rather delicate-looking woman; had never been very strong since she suffered from spinal curvature as a child of eleven. Early in December, 1892, a week after lifting a heavy weight, she first noticed a lump in the left groin; it was soft and painless, and had remained there ever since. For a few months she had been subject to attacks of vomiting near the menstrual period, unaccompanied by any change or pain in the lump. One of these attacks commenced very suddenly on June 14 and continued two days. On June 17 medical treatment was instituted with success until June 19, when vomiting returned and was inclined to become stercoraceous. There had been no movement of the bowels nor passage of flatus since June 14.

On June 20 patient was seen by the writer for the first time; the abdomen was slightly distended; there was severe umbilical pain, abso-

lute constipation, and vomiting, together with a small femoral hernia, tense but painless. Her general condition was quiet, pulse under 90, temperature 98.2° F. She was at once taken to the operating-theatre and anæsthetized. The sac was opened, exposing a small portion of bowel, which looked recoverable, but upon releasing the constriction and drawing down a little more bowel, the contents began to ooze through an ash-gray slough on the proximal side. The bowel constriction extended an inch and a half; on the distal side there was no distinct slough. Incision was made in the median line between the umbilicus and the pubis, a sponge introduced beneath the inner opening of the hernial sac, the bowel cleansed in the sac, reduced with the left hand outside, and rapidly withdrawn from the abdomen with the right hand, previously placed inside to receive it. The peritoneum remained clean during the process. The bowel was then clamped above and below, the injured part quickly cut out with the scissors, the bleeding-points tied, and one of Paul's bone tubes (made of decalcified bone. For detailed description of Paul's method, see *Lancet*, May 30, 1891), one inch by one and a quarter inches, sutured into the upper end. The upper end was dilated and thickened, and it proved impossible to invaginate it into the shrunken lower end. The tube was, therefore, changed for a smaller one (five-eighths of an inch by one and a quarter inches), which was sutured into the lower end. The traction thread was passed, the cut ends attached, and invagination performed. The bowel was invaginated upward instead of downward, a variation which was not found to increase the danger in the original experiments on dogs. As the traction thread had been passed through distended and, perhaps, partially paralyzed bowel, the needle puncture was secured with a single Lembert suture. Fine green catgut was used for all internal sutures, and fishing-gut for the abdominal wall. The abdomen was closed without drainage, after sponging out of the peritoneal cavity a little blood-stained serum which was present before the operation. The hernial wound was closed above, the lower part being left open for drainage. The entire operation, including anæsthetization, lasted one and a half hours. Patient promptly recovered from slight shock of operation. Vomited a little during the night and complained of pain in the back. She progressed favorably until the eighth day after operation, when she had an attack of pain and sickness, apparently due to excess of food, from

which she promptly recovered on lessening the amount given. The highest temperature reached was 99.2° F. on the evening of the sick attack. Six weeks after operation she left the hospital cured. Half a year later had had no return of trouble and pursued her avocation of nursing.

In the same number of the *British Medical Journal*, HORROCKS cites a case in which excision of intestine for malignant disease and circular enterorrhaphy by Paul's method was successfully performed. The case is as follows:

C. H., a married woman, aged thirty-eight, was admitted to the Bradford Infirmary on August 29, 1893, with obstruction of the bowels. She had been an in-patient in October, 1892, with similar symptoms, which were relieved by starvation and opium. She suffered almost constantly from severe abdominal pain, shooting round the loins to the back. The pain was spasmodic, sometimes lasting several hours, and when very severe caused emesis. The bowels were usually relaxed, but during and after the severe attacks of pain they were confined, sometimes for several days. She had had four children; menstruation was painless and regular. She showed no signs of general wasting, though of spare habit. A systolic bruit was heard at the apex, which was not displaced. The abdomen was somewhat full at the lower part, with the umbilicus everted and the skin marked with atrophic scars. The percussion-note was normal over the abdomen. Above Poupart's ligament on the right a solid tumor was felt; it consisted of two parts, divided by a vertical groove.

By vaginal examination the uterus was found displaced downward, with cervix pointing towards the sacrum. Occupying the right fornix and extending in front of the uterus was a rounded swelling, which was continuous with the tumor felt above the pubes. This mass felt hard. It was divided into two parts by a groove and moved independently of the uterus.

On September 29 an exploratory abdominal operation was performed, in which the tumor was found to implicate a considerable portion of the small intestine; the wound was closed and healed without complication. On October 19 the writer operated, the operation lasting an hour and twenty minutes, with chloroform anæsthesia for the first twenty minutes and ether for the remainder of the time. An incision three inches in length was made in the median line rather above the umbilicus. The tumor was adherent to the abdominal wall, along the line of the old scar, which was below the fresh incision. The adhesions were mainly broken down, but the most adherent

part of the abdominal wall was cut away with the growth. The tumor was then drawn out of the abdomen and the opening packed with antiseptic cloths. The intestine beyond the growth on each side was emptied, and an elastic tube was passed through the mesentery around the gut. A V-shaped piece of mesentery, containing enlarged glands, was separated and the bleeding vessels tied. The bowel was now cut across transversely on each side of the growths and the implicated intestine with its attached mesentery removed. A Paul's bone tube was inserted into the open end of the intestine of smaller lumen and the free margin of the bowel stitched to the end of the tube with continuous silk suture; the thread was passed through the holes in the tube and the muscular and peritoneal coats of the intestine. Additional stitches were inserted at the mesenteric attachment. The other cut end of the bowel was now brought into apposition, after the threaded needle connected with the tube had been passed through the intestinal wall from within out, about three inches from the incised extremity. The two ends of the bowel were now stitched together by a continuous Lambert silk suture. By traction on the thread and manipulation of the bone tube the bowel was invaginated for about three-quarters of an inch. It was fixed in this position by a continuous silk suture, which included only the peritoneal and muscular coats. The needle was now cut from the traction thread, which was drawn into the gut. The margins of the mesentery were stitched, partly by interrupted, partly by continuous sutures. The extremity of the vermiform appendix was inflamed and adherent to the tumor. The appendix was ligatured near its proximal end, the distal end removed, and the stump closed in by three silk sutures. The abdomen was cleansed and a glass drainage-tube inserted, with its lower end reaching the bottom of Douglas's pouch. The abdominal wound was closed with silkworm sutures, the end of the drain projecting at the lower end of the wound.

The intestine removed was about thirty-nine inches long. At two places its wall was invaded by growth; the growth was about the size of an orange, consisting of tumor and convoluted intestine, fixed by firm adhesions. The lumen of the intestine was much narrowed and the mucous membrane ulcerated at this point. There was a second growth of smaller size, separated from this by healthy intestine. The mesentery showed several enlarged and infected glands. The growth was a large round-celled sarcoma rising from the submucous tissue.

The patient quickly rallied from the operation, and was discharged November 23, 1893.

#### PRESCRIPTIONS.

*Carbolic Acid in Pruritus.*—The following preparation is spoken of highly :

R Acid. carbolicæ, ℥iss;  
Liq. potassæ, ℥i;  
Ol. lini, ℥i;  
Ol. bergamot, ℥iii. M.  
Shake well before using.

*Simple Remedy for Coryza.*—*Revue Médicale* gives the following as an excellent remedy for coryza: A ripe lemon is taken and some of its juice squeezed into the palm of the hand. The juice is then forcibly inhaled up the nostrils. Two or three such inhalations will suffice to cure an ordinary cold.

*Nitro-Glycerin in Sciatica.*—DR. LAWRENCE (*Revista de Ciencias Medicas de Barcelona*) reports the case of a carpenter, aged fifty-two, who suffered for several weeks with sciatica. In order to alleviate the pain he had become a morphine user and could not abandon the habit. After trying a multitude of drugs, he gave him a 1 to 100 solution of nitro-glycerin, 1 drop three times a day, gradually increasing the dose to 5 drops. Relief was almost immediate, and in ten days he could resume his work, completely cured.

*Epistaxis.*—Plethoric cases are relieved by :

R Tinct. aconit., gtt. viii;  
Liq. ammon. acetat., ℥i. M.  
Sig.—Teaspoonful every half-hour.

In anæmic cases may be employed :

R Strychniæ sulphat., gr. ½;  
Tr. ferri chlor., ℥ii;  
Vini ergotæ, ℥ss;  
Syr. simplices, ℥iss;  
Aq. destill., q. s. ad ℥vi. M.  
Sig.—Teaspoonful three times a day.

—*Medical Press and Circular*, January, 1894.

#### HYSTERECTOMY BY THE PRATT METHOD.

LANPHEAR (*Journal of the American Medical Association*, vol. xxii. No. 4) performed the above operation in a case of uterine tumor in which laparotomy disclosed a uterus so enlarged and fixed in the pelvis that it was impossible to remove it by abdominal hysterectomy. The patient was anesthetized; the perineum and the peritoneal body slit through to give room; the uterine arteries temporarily tied by the method advocated by Dr. F. H. Martin. The tying

of the arteries is an innovation of Lanphear's, Dr. Pratt claiming it to be unnecessary. The uterine canal was packed tightly with gauze, then cut with a knife entirely around the cervix through the mucous membrane and the sub-mucous tissue, until the free and loose connective tissue which envelops the body of the uterus was reached. The fingers were then introduced within the slit and rapidly tore away the uterus and its tumor from the peri-uterine structures. This was rapidly accomplished. Caution should be exercised in approaching the fundus, lest the peritoneum which covers the uterus at this point be penetrated. Very little hemorrhage occurred. For the removal of the uterus and tumor not more than ten minutes were required. The whole operation, including sewing up of the perineum and packing the cavity with iodoform gauze, can be accomplished within twenty-five minutes.

This operation will probably prove an admirable one for cases of this kind, and it is possible that it is also applicable in cases of early epithelioma of the cervix.

#### *SURGICAL TREATMENT OF VARICOCELE.*

SEBILEAU (*Gaz. de Médecine de Paris*, February 24, 1894), after giving the ordinarily accepted indications for operation in case of varicocele, holds that the same method of treatment is not suitable for all cases. When the varicocele is small, the dilated veins being of normal consistence and regularly distended, simple resection of the scrotum is followed by the best results, although in combination with this there should also be resection of the lower segment of the posterior group of veins. When, however, the enlarged veins are greatly enlarged and extend the whole length of the cord, when these veins are partially dilated, indurated, and knotted, a double operation is necessary,—that is, not only is it essential to resect the scrotum and excise the posterior funicular group, but the anterior group must also be operated upon. As palliative means in the non-operative cases, cold douches are recommended to the region of the scrotum and perineum. For these douches, one-per-cent. tannin solution is advised; wearing a suspensory, careful attention to the condition of the bowels are also insisted upon as cardinal points. Resection of the scrotum is a safe operation, the author holds. The parts are prepared as for ordinary surgical intervention. The redundant tissue is pinched up, seized in a clamp, and cut off. Only enough to cover the testicle is left. After resection the clamp should

be removed, hemorrhage checked, and the wound sewed. The wound is not drained. After having checked immediate bleeding, an examination should be made of the veins lying behind the vas deferens. These are readily seen and separated through the large wound incident to the resection of the scrotum; each should be separately seized, tied above and below, and the segment between the ligatures cut out. When the varices have reached their largest development, after resection of the scrotum and excision of the posterior group the wound is sewed as before. An incision is then made along the course of the cord from the external inguinal ring. The various layers of cellular tissue are dissected off, exposing the anterior group of veins surrounded by a little fat. In excising this group the deferens canal and the spermatic artery must be avoided. The artery lies behind the anterior group of veins, and behind it, in turn, lies the deferent canal, together with the deferential artery; and finally, behind these structures is situated the posterior funicular group of veins with the arteries of the cord. It is sometimes difficult to avoid the spermatic artery, since it is so small that its pulsation cannot be detected and is completely concealed by the large veins. Perhaps the best way of avoiding seizing this artery is not to include the whole anterior branch of veins in the thread.

#### *CAMPBOR NAPHTHOL IN THE TREATMENT OF TUBERCULAR ADENITIS.*

RABOUL (quoted in *Centralblatt für Chirurgie*, No. 11, 1894) warmly commends camphor naphthol in the treatment of tubercular adenitis. In some reported cases the favorable results were most striking; in others abscess and fistula followed. It is claimed in favor of this method that there is no danger of intoxication and the treatment is practically painless. It must, however, be long continued. It is interesting to note that Ménard and Calot have reported cases of intoxication following injection of camphor naphthol in abscess cavities. The patient suffered from frequent rapid pulse, loss of consciousness, and epileptiform attacks. The quantity of the drug injected was about 6 drachms. This patient recovered. In another case, eight years of age, 1½ ounces of the solution were injected. In the third case, aged twelve, 5 drachms. In these last two cases life was saved by freely opening the cavity and washing it out on the first appearance of toxic symptoms.

## Reviews.

OUTLINES OF OBSTETRICS. By Charles Jewitt, A.M., M.D. Edited by H. F. Jewitt.  
Philadelphia: W. B. Saunders, 1894.

This work is a syllabus of the lectures delivered at the Long Island College Hospital, and if one can judge of the teaching of the institution from such a syllabus, the instruction in obstetrics in Brooklyn must be very good. Indeed, the publication of Dr. Davis's somewhat larger book at the Jefferson College, which we have reviewed elsewhere, that of Dr. Norris's, which is a syllabus of Professor Hirst's lectures at the University of Pennsylvania, and this one of Professor Jewitt's may be taken as types of the best teaching of this subject to be found anywhere. Jewitt's book is not in the style of the quiz compend, nor is it as full and complete as that of Dr. Davis's. It is not in the form of questions and answers, as are many of the works issued by this publisher, but may be considered as a very condensed epitome. We notice that directions are given for the hypodermic injection of half a drachm of the fluid extract of ergot to prevent post-partum hemorrhage, but nothing is said about the particular method of employment which should be resorted to to prevent unnecessary irritation following such a means of treatment, and we can see no reason why the earlier administration of the drug by the mouth would not in the majority of cases be equally serviceable.

HOW TO USE THE FORCEPS, WITH AN INTRODUCTORY ACCOUNT OF THE FEMALE PELVIS AND OF THE MECHANISM OF DELIVERY. By Henry G. Landis, A.M., M.D. Revised and enlarged by C. H. Bushong, M.D. Illustrated.

New York: E. B. Treat, 1894.

This book by the late Dr. Landis, whose career in the medical profession was so full of promise, has been brought up to modern ideas by Dr. Bushong, and presents in more detail than can be found in the ordinary work on obstetrics the subject of which he treats. We cannot, however, see that there is any reason for the average practitioner purchasing a separate monograph on this subject unless he intends to devote himself entirely to obstetrical work. To such the book can be cordially recommended.

A MANUAL OF PRACTICAL OBSTETRICS. By Edward P. Davis, A.M., M.D. Second edition, revised and enlarged. Illustrated.

Philadelphia: P. Blakiston, Son & Co., 1894.

There have been few books of this size published in this country or abroad which have

been received with such universal favor by reviewers as has this one, which possesses the advantage that its author has not made a condensation from standard works, but has written of obstetrics as only a practical obstetrician of large experience can write. A number of original full-page illustrations are found through the work, and the advice which is given on disputed points in treatment is at once sufficiently progressive to show that the author is in touch with the latest improvements in his art, and yet is governed by the conservatism so necessary to the practitioner of this branch of medicine. We predict for the second edition of Dr. Davis's work an even greater success than that which was obtained by the first.

CLINICAL DIAGNOSIS. By Albert Abrams, M.D. Third edition, revised and enlarged. Illustrated.  
New York: E. B. Treat, 1894.

We regret that the publishers of this work have placed upon the market such a poor example of American book-making, so far as the printing and illustrations are concerned. Many of the pages are not only crooked, but badly blurred or so imperfectly printed as to render reading difficult. The book consists to some extent of abstracts from articles published elsewhere by Dr. Abrams, and is a curious mixture of physical diagnosis, practice of medicine, and therapeutics. The fact that it has reached its third edition proves that it must have been popular with some practitioners, and naturally there is much in its pages which is of value. On the other hand, there are books of the same size and cost which are certainly better.

LECTURES ON GENITO-URINARY DISEASES. By J. C. Ogilvie Will, M.D., C.M., F.R.S.E. With numerous illustrations.

London: The Scientific Press, Limited, 1894.

The five lectures published in this book are by no means intended to cover the entire subject of genito-urinary diseases, but rather to express the author's beliefs and experience gained from the study of certain selected cases.

The first lecture deals with urethral fever. Will holds that catheter fever is due to putrefactive germs which gain access to the bladder by regurgitation of air through the instrument. In this belief he probably stands alone. As the surest way of avoiding urethral fever, the application of cocaine to the urethra and the general employment of steel instruments are advised. Quinine is a drug in which much reliance is placed. A watery solution of sodium bicarbonate is referred to as a reliable antiseptic for washing catheters.

In the second lecture on the treatment of retention of urine, Syme's dictum that there is



no such thing as an impermeable stricture is supported. Continuous dilatation is advocated. As the best way of tying in a catheter, it is suggested that a small ordinary elastic band should be placed in the groove behind the corona glandis; two waxed silk threads are secured to the end of the catheter and passed under this band.

In the treatment of gleet kaolin is recommended. By mixing this with water or oil a thick paste is made. With this paste the urethra is filled by means of a common syringe. A bit of lint is placed over the meatus and retained there as a cork. This injection is allowed to remain in the urethra until the next urinary act, after which the process is repeated. The result is that friction of the inflamed surfaces is absolutely prevented, healing takes place, and the discharge ceases.

In the treatment of varicocele the open method with excision is preferred. Hydrocele should be treated by injections of iodine, this method failing only in exceptional cases.

The final lecture is devoted to the treatment of syphilis. Excision of a chancre is not commended. Mercury is administered before the manifestation of secondaries, and should be given continuously for six months and thereafter intermittently for two and a half years.

There is an appendix containing formulæ used in the treatment of syphilis.

This work, though not entirely modern in its teachings, represents the honest convictions of one who has evidently had large experience. It provides interesting and instructive reading to the general practitioner, and in the main mirrors the methods and beliefs of the present day.

BURDETT'S HOSPITAL AND CHARITIES ANNUAL, 1894.

Edited by Henry C. Burdett.

London: The Scientific Press, Limited, 428 Strand,  
London, W. C., England.

This book is best described in its title-page as containing "a review of the position and requirements, and chapters on the cost of management, of the voluntary charities, and an exhaustive record of hospital work for the year. It will also be found to be the most useful and reliable guide to British, American, and colonial hospitals and asylums, medical schools and colleges, religious and benevolent institutions, dispensaries, nursing and convalescent institutions."

As will be seen from this abstract, it covers a very large amount of information, and to those interested in hospital management it will prove an invaluable guide.

## Correspondence.

LONDON.

(From our Special Correspondent.)

*Consultations at St. Bartholomew's Hospital.*  
—My last visit to St. Bartholomew's Hospital happened to be on a Thursday afternoon, and, having finished the particular business on which I had come, I strolled in the direction of the operating-theatre, where I found one of the weekly "consultations" in full swing. To the already qualified man, or to the student shortly to take his qualification, I think there is no part of the hospital training likely to be of greater value, for here are presented all cases in which there is a difficulty in diagnosis, besides a great many which exhibit rare or unusual conditions. To show how highly these consultations are esteemed in the hospital itself, I need only add that every member of the staff who can do so makes a point of being present, and that the theatre is full from top to bottom of those eager to hear the opinions of their more experienced teachers.

The *modus operandi* is as follows: The patient whose case is to be discussed is brought in, and the notes of his case, including the history of the malady, so far as it can be ascertained, are read out by the surgeon, who draws special attention to the salient features and makes a statement as to its probable nature. All remarks, however, which might give pain or anxiety to the patient are carefully avoided. After this each member of the staff makes an independent examination of the patient, who is then taken back to his ward. The surgeon in charge of the case then states the diagnosis at which he has arrived and the treatment he is inclined to adopt, or, in cases of great difficulty, he states the various constructions which may, in his opinion, be put on the case and the reasons therefor. The other surgeons, in order of their seniority, then give their views as to diagnosis and treatment. Needless to say, there is often great divergence on both points, but no view is expressed without a full statement as to the reason for holding it.

The casual visitor may think that the mere hearing of opinions upon a case with regard to which he has had no opportunity of forming his own conclusions is of doubtful utility to him. If this view should strike him, I would only desire to point out that the "consultation cases" are an indication of the most interesting patients in the hospital, and that all the visitor has to do, if he takes a particular interest in any of the cases shown, is to afterwards visit the wards

with the surgeon, when he will have ample opportunity of making any personal examination which he may care for. Personally, I know of no portion of the post-graduate training which is of greater value to the young practitioner who will take the trouble to thus follow up a case, and in this manner acquire practice in differential diagnosis.

*The Gynaecological Theatre at St. Bartholomew's.*—In former letters I have given brief sketches of our Casualty Department and also of the department devoted to the treatment of cases by electricity. I have described, I hope impartially, the advantages and disadvantages of our out-patient system, and have done my best to give such indications of what goes on as to induce visitors to come and form their own conclusions. I now wish to make a few remarks on our arrangements for operative gynaecology, a subject which has of late years attracted an enormous amount of attention. And at the outset I would say that it is by no means held that the arrangements are the best which could possibly be devised; they are, however, probably as good as one can obtain without the erection of entirely new buildings. The present operating-theatre was built a good many years ago, at a time when the paramount importance of the strictest asepticity was not understood as it is now. Not so long ago it was held that any room would do for the performance of such an operation as that of abdominal section, provided a sufficient quantity of antiseptics, etc., were poured into and around the wound before and during the operation. Now it is the great object of every operator not to saturate his patient with antiseptics, which may of themselves both fail to kill microbes, and may so lower the resistance of the parts to which they are applied as to render them an easy prey to the bacteria which escape destruction. It is now sought to insure the perfect asepticity both of the room, the patient before operation, and of everybody and thing which may come in contact with her; and it is the more or less perfect realization of this idea which has, no doubt, contributed to the greatly increased measure of success attending abdominal operations of late years, although increased experience has, of course, also played an important part in bringing about the same end.

To return to my subject. "Martha" theatre was constructed when antiseptic surgery was the fashion. It has, therefore, many, but not all, of the advantages of the most modern operating-room. The floor is laid in closely-fitted, narrow teak boards; the walls are painted, so as to allow of frequent and care-

ful cleansing, but they would have been decidedly better had they been, partly at least, tiled. The wash-basin is fitted with hot- and cold-water taps, and the waste is carefully trapped, the trap being fully exposed, so as to allow of the prompt detection of leakage. To avoid all possibility of sewer contamination, the waste-pipe discharges into the open air as quickly as possible. The theatre, which is about nineteen feet square, is lighted both by large side windows and by skylights. It is warmed by hot-water pipes and by a fireplace on the south side.

All the fittings of the room, even to the operating-table, are made, so far as possible, of glass and metal. The top of the operating-table is fitted, besides, with a large copper tray to contain hot water (130° F.), an important adjunct in the prevention of shock in cases of long exposure. The glass above this is covered by a clean sterile blanket, on which the patient is laid. There are two other tables of similar construction, to hold respectively the dressings and instruments. The furniture of the theatre is completed by a large glass irrigator, slung from the ceiling and capable of holding three gallons of sterilized water; an air-tight instrument cupboard, with glass shelves and metal pegs for holding instruments; and three sterilizers,—a small, shallow, oblong one for boiling instruments, a large barrel-shaped one, holding nine gallons, for preparing sterilized water, and an oval dry sterilizer for sterilizing dressings. This last is fitted with a perforated false bottom to prevent the dressings from becoming scorched from coming into direct contact with the possibly overheated copper bottom. All other instruments are, it is needless to add, so made as to be capable of thorough cleansing and sterilization. On the evening before an operation the theatre is specially prepared. The windows and ventilators are opened and left open all night, the floor is carefully polished, and the walls, basins, and all other things washed with sublimate. Sterilized water is prepared, and dressings are placed in the sterilizer, heated for twenty minutes to 356° F., and left there until required. All these precautions are adopted because it is the conviction of the operator that the time when septic conditions are introduced is that during which the abdominal wound is open, and that once this is closed the septicity or asepticity of the operation is practically determined. Precautions are completed, so far as the theatre is concerned, by again going over everything on the morning of the operation with a cloth damp with sublimate.

Such is our operating-theatre and the pre-

cautions to insure asepticity. The results obtained lately have been in every way most encouraging. I hope, however, to return to these matters on a future occasion.

#### "CEREBRINE" AGAIN.

To the Editors of the THERAPEUTIC GAZETTE:

DEAR SIRs:—I have made a chemical examination of the "cerebrine" so called of Dr. William A. Hammond, to the single end of determining the presence or absence of nitro-glycerin. I have made this examination (1) of the article furnished in the market as Dr. Hammond's "cerebrine," and (2) of the preparation made by me, according to Dr. Hammond's published directions, in process of completion.

1. The article of "cerebrine" of the market I obtained for analysis directly from Hege-man & Co., 196 Broadway, New York, on September 15, 1893, and on September 25, 1893. The article as I received it was contained in bottles holding five to six centimetres when full, and labelled "Sterilized Solution of Cerebrine. Dose, 5 minims dropped on the tongue or hypodermically. Prepared by Columbia Chemical Company, 90 South Fifth Avenue, New York." Diagonally across the face of the label is the red script "William A. Hammond." The contents of eight of these bottles were used in the chemical examination. I find that this article—the "cerebrine" obtained from the market as above—contains nitro-glycerin. I reach this conclusion from the concurring evidence of the several chemical reactions of nitro-glycerin. Some of these reactions are clearly given by the cerebrine liquid just as it is taken from the bottle, and all of the reactions of nitro-glycerin are obtained after due procedure for its separation. When so separated the concentrated product gives the characteristic reactions of nitro-glycerin with vivid intensity; and I find that the concentrated product agrees with nitro-glycerin in its physiological effect, as a poison. The procedure for separation of nitro-glycerin from the "cerebrine" is fully effectual, so that the remaining cerebrine liquid offers a negative response to all the qualitative tests for nitro-glycerin.

2. The preparation of "cerebrine," by the directions published by Dr. Hammond, I placed in maceration on October 14, 1893. I have macerated the brain of the ox and the contained blood in a mixture of equal parts of absolute alcohol, glycerin, and a saturated solution of boric acid in water, with frequent

agitation and strong pressure, five months and twenty days, and have then made chemical examination of a portion of the product. The product, at this period of maceration, perfectly agrees in appearance every way with the "cerebrine" which I obtained from Messrs. Hege-man & Co. last September. But the "cerebrine" of my preparation, under the directions published by Dr. Hammond, with the time of maceration just stated, does not contain a trace of nitro-glycerin. It fails to give the slightest reaction for ethereal nitrates of any sort, and the procedure for separation of nitro-glycerin in concentration yields nothing but negative results when subjected to all tests for this body.

Yours, very truly,

ALBERT B. PRESCOTT,

*Professor of Organic Chemistry in the University of Michigan.*

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## Notes and Queries.

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### AMERICAN MEDICAL ASSOCIATION.

The Committee of Arrangements has worked indefatigably on the matter of transportation rates, trying to get a round trip for a single fare.

By advice of Mr. T. H. Goodman, General Passenger Agent of the Southern Pacific Company, who furnished addresses, we sent out circulars to agents of all roads interested in the matter.

About one-half of those replying favored our petition, and promised to advocate it before their respective associations, through which all such matters must be arranged.

The following communications from Mr. Goodman place the matter, as it now stands, in a clear light:

"SAN FRANCISCO, March 16, 1894.

"DR. R. H. PLUMMER,

*"Chairman Com. of Arrangements, A. M. A.,  
652 Mission Street, San Francisco.*

"DEAR SIR,—This morning's mail brings us your yesterday's letter, handing for our perusal three letters from Eastern railway officials. Having read the letters you sent, we return them herein, and beg to emphasize our previous statements to you in person and by letter, that the Trans-Continental roads have virtually done what you ask,—namely, accorded a one-way rate.

"In other words, the rate for a thirty-day ticket from Missouri River points to San Francisco is \$60.00. Excursion—that is, round-trip—tickets, Missouri River points to San Francisco and return, are being sold to-day at

a rate of \$65.50. Such tickets require the going trip to be made within fifteen days from date of sale, and the return trip within fifteen days after the day upon which the ticket is signed here in presence of a railroad agent, but in no event later than July 15 next.

"We have told you that within the State of California we ignore this fifteen-day limit on both going and returning trips; in other words, that the holders of the tickets are at liberty to move at will within the State of California within the life of the ticket, and that the fifteen-day limit returning is not enforced west of our terminals at Portland, Ogden, and El Paso.

"You have asked our permission to state positively that these Midwinter-Fair rates would be in force at the time attendants at your convention will want to move westward. We have replied that the traffic is west-bound traffic, and that we do not control the matter. You will doubtless, however, recollect our telling you that this rate would, in all probability, hold until after that period. We gave you our reason for that statement,—namely, that one of the roads had announced that it would continue the sales up to June 30.

"We appreciate your desire for an authoritative statement in this regard. As we cannot make it, we write you that we feel you are quite safe in stating the fact that such rates have been announced, and that the sale would continue until that date.

"We beg to again call your attention to one point, which is quite material in this matter. The Trans-Continental roads having virtually done what you asked, you should bring all the influence to bear that you can upon the roads east of the Trans-Continental roads. Those roads are, for the most part, the ones forming the Western Passenger Association, the Central Traffic Association, and the Trunk Line Association. The Western Passenger Association roads lie between the Missouri River and Chicago and St. Louis. You should go to them for a rate similar to our Midwinter-Fair rate. They tell you their rate will be \$20.00, Chicago to Missouri River and back, and \$12.00, St. Louis to Missouri River and back. As the single-trip rate, Chicago to Missouri River, is \$12.50, and from St. Louis \$7.50, you will see that their rates are not reduced nearly so much as the Trans-Continental road rates. Can you not through some of your profession at Chicago approach the general passenger agents of the lines leading from Chicago whose names we have given you? We think they will appreciate the importance of the occasion.

"One of our assistants has in hand the matter

of reduced rates locally, and you will be shortly advised.

Respectfully yours,

"T. H. GOODMAN."

Extracts from letter of February 12, 1894:

"The rates thus continued are as follows: \$65.50 from Missouri River points, being Sioux City, Council Bluffs, Omaha, Pacific Junction, St. Joseph, Atchison, Leavenworth, and Kansas City; \$77.50 from St. Louis, Cairo, Memphis, and New Orleans.

"The rates mentioned to you exceed the one-way thirty-day rates as follows:

"That from the Missouri River by \$5.50, that from St. Louis, Cairo, Memphis, and New Orleans by \$10.00, and that from Chicago (\$85.50) by \$13.00.

"We deem it but proper to here mention that if our Shasta route between San Francisco and Portland is passed over on either going or returning trip from Missouri River, St. Louis, or Chicago, the rate will be \$15.00 greater.

"As on this occasion passenger movement is from the east to the west, it is but proper that the question of rates should be taken up with officials of Eastern roads. We suggest, therefore, that you correspond first with those who have charge of the passenger traffic of the so-called Trans-Continental Association roads. They are as follows:

\* \* \* \* \*

"For rates from the territory lying beyond the Missouri and Mississippi Rivers you should address: Mr. B. D. Caldwell, Chairman Western Passenger Association, Chicago; Mr. F. C. Donald, Commissioner Passenger Department Central Traffic Association, Chicago; Mr. L. P. Farmer, Commissioner Passenger Department Trunk Line Association, New York; Mr. M. Slaughter, Assistant Commissioner Southern Passenger Association, Atlanta, Ga."

\* \* \* \* \*

From the foregoing communications it will appear that, while we have not been wholly successful, if the roads between the Missouri River and Chicago and between Chicago and Atlantic points, where local travel far exceeds that over the Rocky Mountains, will give the same reductions as the roads from the Missouri River points to San Francisco, we will practically have a single fare for a round trip.

Cannot the profession in the East by united efforts secure these concessions?

The time is growing short, and chairmen of the different sections should send in their reports, etc., for insertion in the programme.

R. H. PLUMMER,

Chairman.

SAN FRANCISCO, March 25, 1894.

# THE Therapeutic Gazette.

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## Original Communications.

### A NEW BLOODLESS OPERATION FOR THE EXCISION OF HEMORRHOIDS, WITH HEALING BY FIRST INTENTION.

BY H. M. BISHOP, M.D., LOS ANGELES, CAL.

IN the domain of surgery no field has been fought over more energetically in modern times than that which pertains to operations on the rectum, and particularly to the removal of that most important, because so common and distressing, ailment, hemorrhoids. The

most valorous determination to rescue its treatment from the uncertainties and vagaries of empiricism and to establish it on sound surgical principles has actuated the advocates of the various methods now in vogue.

Believing that a process of dealing with hemorrhoids, evolved from my own conceptions after many years of contemplation and trial in devising means to harmlessly control hemorrhage while excising the tumors and redundant folds of the rectum, and likewise to hold in perfect and undisturbed coaptation the edges of the incision, will receive favorable consideration from intelligent and unbiassed promoters of advanced surgery, I will, without further

consumption of valuable time, enter *in medias res* with as little vexing of the polemics of the subject as possible.

The following is the *modus operandi*: With a lateral or dorsal decubitus, as convenience or expediency may decide, and with an aseptic perineum and dilated sphincter, gently and smoothly clamp the base of the hemorrhoids with suitable forceps, so as to parallel the approximated surfaces and free them from folds and other inequalities; then, having left room between the clamp and adjacent healthy tissues, apply on either side a sufficient length of rubber tubing five or six millimetres in diameter, with a lumen of one millimetre, and secure with aseptic catgut after the general manner of the quilted suture. To assure accuracy of adjustment, the pieces of tubing should be of the same length, and have corresponding marks six or eight millimetres apart, indicating the locations for the sutures. Each tube should have its extremities hermetically sealed by the sutures there tied, thus adding a degree of pneumatic elasticity to that possessed by the rubber. All the sutures should be preapplied or tied beforehand to one of the pieces of tubing, with threaded needles in each of the opposite loops, ready for transfixing the tissues and tying over the other piece of tubing. Remove the forceps, and excise the tumor close to the rubber tubing with flat scissors. I have sometimes varied the fixation of the tubing by using one piece doubled upon itself and drawn together with a continuous suture, made to assume an advancing figure of eight, or double spiral, by passing the needle always close to the forceps and the thread always encircling the tube from below upward; the perforations then are in one line and the tension evenly distributed. Where many stitches are to be taken, it saves the time consumed in tying. This completes a bloodless operation, for the elasticity of this welted suture supplies sufficient pressure to prevent all hemorrhage, and maintains in perfect and uniform contact the margins of the wound without endangering from local asphyxic and necrotic conditions consequent to rigid clamping and without interfering with the plastic exudation of repair by first intention.

The further dressing of the wound consists simply in passing a strip of moist borated gauze into the rectum, leaving an end protruding from the anus. The catgut sutures soften in due time and permit the tubing to pass away, while the flexibility of the latter has adapted itself to the environments, with the minimum of annoyance to the patient.

What the Esmarch bandage is to amputations, the same is this elastic quilted suture to the removal of hemorrhoids or other angiomas from surfaces sufficiently lax to allow of approximating folds of sound tissue at their base. Compared with the ligature, it possesses all its advantages with none of the disadvantages attendant upon the distorted, puckered strangulation of the parts, followed by sloughing and ulcerative healing. The clamp and cautery also leave surfaces of crushed and lacerated tissue which the hot iron at best must transform into a burn of the second grade, with inevitable cicatricial contraction. Whitehead's operation is prolix, tedious, and wasteful of the vital fluid. The injection of carbolic acid is unreliable and precarious, save in expert hands, and even then we must wait for nature to expel the mummified mass and fill in with granulation before the cure is perfect. The accidents and lack of success that have been known to attend these various methods are apologetically attributed by their champions to unskilful hands. I feel confident that this new method will succeed with those who make no claim to extraordinary cleverness. It approaches the ideal of operative exæresis, and attains the desiderata of all surgery,—speedy and clean removal of the condemned part, economy of blood, and primary union.

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#### FRACTURES OF THE NECK OF THE FEMUR AND THEIR TREATMENT.

BY BEDFORD BROWN, M.D., ALEXANDRIA, VA.

MY personal experience in fractures of the neck of the femur comprises fourteen cases. Of these, about ten per cent. died in less than twelve months from complications, as inflammation and suppuration at the seat of injury, and fever; two per cent. were bedridden for the balance of life; the remainder recovered sufficiently to walk with the aid of a cane or crutch for the balance of life. All the bedridden cases were of the extracapsular variety, while the cases that recovered the power of locomotion were of the intracapsular non-impacted variety.

All of these cases of fracture of the neck of the femur occurred in females varying in age from sixty to eighty-five years. These fourteen subjects presented every variety of conformation of figure. In two there was great obesity. In some the figure was tall and spare, while in others it was quite *petite* and very delicate

and slight. In one the figure was that of a very robust woman a little over sixty. In one, a woman of eighty-five, the weight did not exceed eighty pounds and the person was very emaciated.

*Causes of Fracture of the Cervix Femoris.*—The causes of this fracture may be classified as the direct or major and the indirect or minor.

The major form of cause is always from direct violence, as a sudden fall from a distance on the hip, or a violent blow or great pressure from mechanical causes on the same point. On the contrary, the minor causes are always of the indirect variety from unusual sudden pressure on the foot while walking, a slight misstep, sudden twist of the foot in walking.

A knowledge of the major and minor or direct and indirect character of the existing causes will aid us materially in differentiating the variety and location of the fracture. The major or direct causes almost invariably cause the extracapsular variety of fracture with or without impaction, while the minor or indirect causes produce intracapsular fracture.

*Symptoms.*—In all cases of suspected fracture of the neck of the femur, the entire person, from the anterior superior spinous process of the ilium to the toes, with exception of the external genital organs, which can be protected from view by a napkin, should be exposed to inspection. After the clothing has been removed above the pelvis, we are at once enabled to see the relationship of the two opposite trochanters to each other, their corresponding appearance, their relative prominence. We can also observe the relative positions of the two limbs throughout their entire length, and we can better detect the slightest eversion of the foot, the least departure in its direction, and at the same time the least degree of shortening of the limb. Much of the information gained by this investigation is in these cases derived from comparative observation. The trochanter should first be examined. In the fractured bone, except in cases of impaction and non-displacement of the fractured ends, the trochanter is depressed and flattened, compared with the sound side, and when moved from side to side the arc of the motion is considerably reduced. Extending our investigation downward, we observe the lower or tibial end of the patella does not correspond with that on the sound side. It is from a quarter of an inch to an inch above the line of that of the sound limb. Continuing our observations to the foot, we find a shortening of the limb to the extent of from a quarter of an inch to an inch and a quarter in length; at the

same time we find the foot of the injured limb everted. When by our own aid we correct this eversion, it invariably returns spontaneously, and when the patient is requested to correct it she is unable to comply with the request. Here we have a typical picture of a simple fracture of the cervix femoris: first the depressed flattened trochanter, the difference in the line of the corresponding patellæ, the shortening of the limb and eversion of the foot. When the entire person is exposed, without any movements of the patient or manipulation on our part, the eye can detect these peculiarities at a glance.

Then, again, in non-impacted fracture, if an assistant grasps the foot of the injured limb, and alternately extends and relaxes the limb, while the attendant grasps the trochanter and presses it firmly towards the pelvis, distinct crepitus may be detected.

*Methods of Differentiation between Intracapsular and Extracapsular Fractures.*—In determining the important question whether a fracture is intra- or extracapsular, is non-uniting or uniting, the peculiar character of the cause assumes diagnostic importance. It may be said, with much degree of certainty, that shortening of the limb to the extent of a half or one inch, eversion of the foot, moderate pain in the hip, no indications externally of contusion, some crepitus on extension, flattening of the trochanter occurring after a slight indirect injury, as a very sudden misstep, striking the foot against the floor or steps forcibly, or a sudden twist or wrench of the foot from any slight cause in the aged, denote intracapsular fracture, with no possible tendency to unite. On the contrary, shortening of the limb to the extent of from one to two inches, with eversion of the foot, great pain in the hip, flattening of the trochanter, effusion in the surrounding tissues in front and rear of trochanter, crepitus on extension in the comparatively young, much contusion of soft parts from a major form of cause, as a violent fall, blow, or pressure directly on the trochanter, denote extracapsular fracture, with tendency to union of ligament.

Then, again, a slight shortening of the limb and eversion of the foot, with much pain on attempted motion, absence of crepitus, slight ability to raise the limb or stand upon the foot, great effusion in front and rear of trochanter from a violent direct injury to the trochanter, with contusion of soft parts, indicate impacted fracture.

*Diagnosis of Impacted Fracture of the Cervix Femoris.*—The two cases of impacted fracture of the neck of the femur which came under my

observation both resulted from indirect and violent causes. In one the patient was seventy years old, and had a violent fall directly on the trochanter of that side. The trochanter was found, on comparison with the opposite side, to be flattened and depressed, and very tender on pressure. There was considerable swelling back of the trochanter, and in front, below Poupart's ligament, there was great swelling and much pain and tenderness. There was entire loss of power over the limb and inability to stand on it.

Shortening of the limb was imperceptible and eversion was entirely absent. The injury occurred more than six years since, and the patient has never recovered the use of the limb and is still comparatively bedridden.

The second case occurred in a comparatively young person, with symptoms identical to those of the former, and has never recovered a fair degree of locomotion in the limb since the injury.

*Complications.*—One of the most serious complications observed in my experience has been symptomatic fever following the injury. It is more apt to occur in the extra- than the intracapsular variety, because the causes are of a more violent character and the anatomical structures of the part are more extensively lacerated.

I never saw but one case of protracted fever following intracapsular fracture in an aged person recover, and that was in the case of a woman aged eighty-five. She recovered, and lived in comparative health and comfort to reach ninety years, and then died from hemiplegia.

A temperature ranging from  $101^{\circ}$  to  $103^{\circ}$  F., a quick pulse, pain and restlessness, denote serious organic changes going on in the injured structures, that if permitted to progress will continue until extensive inflammation, effusion of exudates, and suppuration intervene.

*Treatment of Fractures of the Neck of the Femur.*—There is no class of fracture that requires the exercise of more judgment in their treatment or more accuracy in diagnosis than fractures of this kind.

In one variety of fracture—the extracapsular—in those below middle life we can with safety adopt means to bring about union. To adopt the same means in intracapsular fracture in the aged would insure certain death; hence the importance of an accurate differential diagnosis.

*Treatment of Intracapsular Fractures.*—In my own experience a good rule to work by in treating intracapsular fractures of the cervix

femoris in the aged is not to expect union of the fractured bones, but, on the contrary, to so conduct the management of the case as will, if possible, insure a good, strong false joint, by which, after a time, the patient can regain a fair degree of locomotion for the balance of life. To bring about this desirable object, the pelvis from the anterior superior spinous process is enveloped with a broad flannel roller four inches wide and fifteen feet long, applied down below the trochanters. This flannel bandage gives comfort by the support that it affords the fractured bones and the prevention of too much motion, and gives opportunity to the soft parts involved to throw out adhesive exudations. This is the full extent of the apparatus to be applied. As for the balance of treatment, pillows long and short, small and large, are to be relied on for splints and supports. Comfort of position is to be the guiding rule in the management of this class of cases. The ingenuity of surgeon and nurse will be taxed to so arrange the pillow-splints as to insure comfort, relieve pain, and secure sleep. When these objects are accomplished all has been accomplished that judgment and experience can do until inflammatory action subsides and the process of fibrinous exudation is completed, and then the false joint is ready for use. To attempt, on the contrary, to confine this class of patients in a stiff apparatus, with the view of accomplishing that which no power can ever effect,—a union of bone or ligament,—is to condemn our patient not only to unnecessary suffering, but to certain death.

In the treatment of extracapsular fracture from violent and direct causes in the comparatively young, we may calculate with a degree of certainty on ligamentous union, provided the method adopted will maintain perfect adaptation of the fragments, and we can adopt such method and apparatus as will insure this end without fear of detriment to the patient's health. After the pelvis has been firmly enveloped in the broad flannel roller, as in the former case, then Buck's extension apparatus is applied and the extension maintained until union takes place, which is usually about six weeks.

In impacted fracture my method of treatment has been to envelop and support the pelvis and fractured hip-bones by means of the flannel bandage, which I consider better and more comfortable than a simple band. For the purpose of supporting the limb and preventing motion, which might cause dislocation of the fractured bones, two sand-bags are used, the longer external reaching from above the pelvis below the foot, the other, shorter,



reaching from a little below the external genitals on the inside of the limb below the foot. These arrangements appear to meet the desired ends better, in my own experience, than any other.

*THE INJECTION IN PNEUMONIA AND  
TYPHOID FEVER OF SERUM  
FROM CONVALESCENTS.*

READ BEFORE THE SECTION IN PATHOLOGY OF THE PAN-AMERICAN MEDICAL CONGRESS.

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BEFORE taking up the consideration of the actual cases of these injections themselves, let us glance briefly at the conditions which have led up to them, the evolution of theories which have made them possible, and the final results, towards which they are but stepping-stones. And these are all bound up within the problem of immunity,—a problem which has ever engaged the attention of observers, a problem which has baffled even theory, and the solution of which will go far towards the rounding out of the circle of medical investigation.

Immunity is natural or acquired. Natural immunity is first, inherent in races or species, due here either to processes acting along the lines of evolution or, on the other hand, to the continued failure of the causative microbe to adapt itself to conditions existing in the host; second, sporadic,—that is, existing in scattered individuals of a species,—a condition difficult of explanation, but probably, again, evolutionary. Acquired immunity, differing radically from the natural, is brought about by a slow habituation to the poison, probably by a process analogous to vaccination, by vaccination itself, or else is due to a previous attack of disease. It is this acquired immunity which is so difficult of explanation,—a difficulty shown by the numerous theories brought forward towards its elucidation, and by the warmth of support which every one of these theories has elicited.

The theories which at present are most prominent, and, indeed, to which all others may in some manner or other be referred, are that in which the cells play an all-important rôle (phagocytosis), and that which attributes the whole protective power to the blood-serum. The old explanation given for immunity before

the part played by bacteria in the production of disease was clearly known—that of exhaustion of the soil—has been almost completely cast aside; unfortunately so, perhaps; for, reasoning by analogy with the higher vegetable growths, it is more than possible that this may eventually demonstrate itself to be a most important factor. However, it is not our purpose here to discuss at length the theories of immunity, much less to attempt to decide between them; the ground has been so thoroughly gone over that to reharrow it would be wearisome as well as useless, and, too, the time is not yet ripe; there are as yet too few facts in our possession; our knowledge does not yet extend far enough to make a definite decision tenable.

There are, though, some facts necessary to be made prominent, lest we fall into error. While bacteria are the cause of a disease, yet its symptoms are due not to the bacteria themselves, but to products attendant upon their growth, and the destruction of these products, while causing an abatement of the symptoms, may still have no effect upon the bacteria and may not be at all concerned in the production of immunity. Again, care should be taken not to identify the action of blood-serum with that of blood-plasma, for it is well known that while serum may be strongly bactericidal, yet in the plasma from which the serum was drawn the bacteria may flourish luxuriantly. Further, as the *ultima Thule* of our investigations is the preservation of life, we must not be led away by theories looking to brilliant immediate results, but rather gather together our facts slowly and surely, looking not for an instant reward, but hoping everything at the hands of the future.

The knowledge that we have acquired of the production of immunity is briefly this. The introduction into the blood of animals of immune blood, of attenuated bacteria, or of the products of bacterial growth may render these animals unsusceptible afterwards to that disease. Whether this immunity is due to a failure of the bacteria to grow or to a loss of lethal power of their products is a moot point; at least this much is evident: it is the result of some change in the condition of the immune animals. Most experiments have been done upon animals; the few on human beings are much the most valuable, but at the same time much more liable to error and to lead to false deductions. It can readily be seen why this must be so. We cannot control nearly so completely the conditions which surround a man as those among which a white rat lives.

The first impulse is to attempt to produce a cure, to brilliantly imitate nature or even to

improve on her, and, stepping in suddenly, end a disease. But it must be steadily borne in mind that the production of a cure is not necessarily the production of immunity; cure and immunity may not be strictly synonymous. It is true that after the cure immunity follows; but may not the production of cure be merely a step in the production of immunity? May it not be brought about in various ways, and the destruction of the symptom-producing toxins a process so varied and indefinite that even after its nature is fairly understood it may be of little practical importance? Therefore it would seem possible that, while the destruction of the toxins may seem the simplest and easiest way of attaining our end, yet in reality that end can be attained only through a thorough understanding of the deeper processes that underlie the production of immunity and be protection rather than cure. The only disease in which such protection has been a perfect success is small-pox, and here vaccination was stumbled upon, and its processes are even yet not understood. The only other disease in which efforts have been made to produce results by a process similar to vaccination is hydrophobia, and here the success is somewhat doubtful. On the other hand, in three diseases—tetanus, measles, and pneumonia—a cure has been striven for by the injection of immune serum. Because a certain result follows a certain procedure in one disease is no good reason why this should hold good in an allied disease. We know too little of the life histories of micro-organisms to generalize successfully. That there are different methods for the production of immunity, and so different methods of cure, is probable from the existence of natural immunity. The blood of animals naturally immune seems to have little effect in conferring immunity, nor does the serum from such blood differ in its bactericidal power from serum from susceptible animals. In the three diseases above mentioned the procedure adopted has been the injection of serum from animals or persons rendered immune by previous vaccination or disease. Here, looking at the results obtained, the theory has been advanced that the cure is brought about by a neutralization of the toxins, and that it is this antitoxic material which confers immunity. In tetanus, the method has been a success; in measles, at least doubtful. Pneumonia, which more nearly concerns us at present, was experimented upon first by the Messrs. Klemperer. They announced the following facts: Animals can be immunized by the introduction into their blood of the sterilized products of the diplococcus; heating these

products to 140° F. hastens the process. This immunity is conferred only after the lapse of some time, and is attended by fever. The introduction of immune serum confers immunity immediately. This paper was soon followed by the publication of other cases. Among others, we published\* a case where we used intravenously defibrinated blood, and gave our reasons against a repetition of such a procedure. Since the publication of our paper, Audeoud† and others have placed cases on record, till at the present time there are records of thirty-nine cases, of which all but one have been successful.

The fourteen cases of the present series, which we shall ask you to consider, were selected carefully, as being typical, and taken at a time when there would be little danger of confounding the result obtained from the injection with the natural crisis. In all serum was used, which was obtained most frequently by venesection, occasionally by blistering. The serum was injected subcutaneously, this having been found to be as efficacious and less dangerous and troublesome than intravenously.

CASE I.—In Philadelphia Hospital. Man, (negro) aged twenty-six years; pneumonia involving whole of right lung; general symptoms of quite marked severity; temperature averaging about 103° F.; diplococci in sputum. On the fourth day of the disease, at 2 A.M., 7 cubic centimetres of serum were injected, and again at 9 P.M. 25 cubic centimetres. The first injection was followed by no change whatever in the temperature. Twelve hours after the second it fell to 101° F., but rose again immediately, though never to the height it had maintained before the injections. It was not till the eighth day that the crisis occurred and the temperature fell to normal. After this there was a secondary rise, the normal being finally maintained after the tenth day. Beyond the trifling lowering of the temperature after the injections, there was no effect produced upon the general symptoms. Resolution of the affected lung was rather slow than otherwise.

CASE II.—In Philadelphia Hospital. Man, aged fifty years; alcoholic pneumonia of moderate severity; consolidation involving part of lower left lobe; temperature not high, ranging between 101° and 102° F.; diplococci in sputum. On the fourth day 25 cubic centimetres of serum injected, which was followed in twelve hours by a subsidence of the temperature to normal and a complete amelioration of the

\* THERAPEUTIC GAZETTE, October 15, 1892.

† *Rev. Méd. de la Suisse Romande*, February 20, 1893.

general symptoms. The man died, however, about a week later of uræmia. The death could in no wise be attributed directly to the pneumonia, convalescence from which was complete. Albumin and casts had been noted in the urine during the febrile period, and it is probable from his history that the Bright's disease antedated by some time the pneumonia.

CASE III.—In Presbyterian Hospital. Man, aged sixty-seven years; both lungs involved irregularly at the bases, but consolidation nowhere perfect; general symptoms of great severity; typhoid state; low, muttering delirium; marked heart-weakness. Temperature quite irregular, ranging between  $100^{\circ}$  and  $104^{\circ}$  F. Diplococci present in abundance in the sputum. On the ninth day, at 4 P.M., 25 cubic centimetres of serum injected. On the next day, at 1.30 P.M., 15 cubic centimetres. The injections had absolutely no effect upon either the temperature or general condition, and the man died six hours after the administration of the second one. The post-mortem examination showed a condition of lungs suggestive rather of broncho than of lobar pneumonia, although there were present copious virulent diplococci.

CASE IV.—In Presbyterian Hospital. Man, aged forty years; right apical pneumonia; symptoms of moderate severity, temperature averaging about  $102^{\circ}$  F.; diplococci in sputum. On the fourth day, at 4 P.M., 9 cubic centimetres of serum injected. At 8 P.M. the temperature commenced to fall, and four hours later it reached  $95.4^{\circ}$  F. Convalescence was rather protracted, though this was probably the result of concomitant conditions. The man gave a history of syphilis and had Bright's disease, dating back at least four years.

CASE V.—Girl, aged eight years; pneumonia of right lower lobe; symptoms of moderate severity, temperature ranging between  $102.5^{\circ}$  and  $103.5^{\circ}$  F. On the third day 2 cubic centimetres of serum injected. The temperature maintained its usual range for twenty-four hours, when it commenced to fall, and by twelve hours later had reached normal. The pneumonia was followed by a trifling pleural effusion without any return of fever, but this was quickly absorbed and scarcely at all retarded convalescence.

CASE VI.—In Presbyterian Hospital. Man, aged twenty-four years; pneumonia of right upper lobe; general symptoms of pronounced severity, verging on the typhoid state, temperature ranging between  $103^{\circ}$  and  $105^{\circ}$  F. On the fifth day, at 8.30 A.M., 25 cubic centimetres of serum injected. By midnight the tempera-

ture had fallen to  $100^{\circ}$  F., delirium had disappeared, skin was cool and moist, and, in short, the general condition was immensely bettered. After this the temperature slowly rose, ranging between  $101^{\circ}$  and  $103^{\circ}$  F., but never attaining its previous maximum, and the delirium and other bad symptoms returned in a measure. It is perhaps worthy of note that during this period cold sponging produced a marked temporary abatement of the fever, while previous to the injection it had but little effect. Through an inadvertence no further injection was given till the eighth day, when 5 cubic centimetres of serum were used. Promptly after this the temperature fell to  $97^{\circ}$  F. Convalescence was very rapid.

CASE VII.—In Presbyterian Hospital. Boy, aged eleven years; case of moderate severity, temperature ranging between  $102^{\circ}$  and  $104^{\circ}$  F. On the fourth day, at 2.30 P.M., 11 cubic centimetres of serum injected. By 2 A.M. of the next day the temperature had fallen to  $96.8^{\circ}$  F. Convalescence was rapid.

CASE VIII.—In Philadelphia Hospital. Man, aged twenty-eight years; pneumonia of left lower lobe; symptoms of moderate severity, temperature averaging about  $103^{\circ}$  F.; diplococci in sputum. On the fifth day 25 cubic centimetres of serum injected. Twelve hours after the injection the temperature had fallen to normal.

CASE IX.—Man, aged twenty-one years; pneumonia of right lower lobe. This case was seen from the very inception of the disease, and promised in the beginning to be one of only moderate severity. On the second day, at 9 P.M. (forty-six hours after the initial chill), 25 cubic centimetres of serum were injected. The temperature up to this point had been constant at  $104.4^{\circ}$  F. At 9 A.M. of the following day it was  $103.4^{\circ}$  F., where it continued throughout that day, with no change in the general symptoms from those of the day preceding. At 9 P.M. 40 cubic centimetres more were injected. Twelve hours later the temperature had returned to its original  $104.4^{\circ}$  F. At 9 P.M. again on that day—the fourth of the disease—45 cubic centimetres were injected. Five hours later the temperature had fallen to  $101^{\circ}$  F., but this subsidence was only temporary and unattended by any amelioration of the general symptoms, which had been steadily growing graver. Two days later meningeal symptoms became prominent (before this there had been but the ordinary delirium of pneumonia or any other febrile state), and on the following day he died. At the time of death the temperature had reached  $108^{\circ}$  F.

CASE X.—In St. Agnes Hospital. Man, aged twenty-five years; upper lobe of right lung completely consolidated; all the symptoms were of pronounced severity; diplococci in the sputum; temperature ranged between  $102^{\circ}$  and  $104^{\circ}$  F.; immediately after admission to the hospital it had been  $105^{\circ}$  F. At the end of the fifth day 50 centimetres of serum injected. No appreciable effect was produced upon the symptoms by the injection, and the man died twenty-four hours later, the temperature at the time of death being  $104^{\circ}$  F.

CASE XI.—In Presbyterian Hospital. Woman, aged forty-five years; consolidation had involved whole of right lung; the symptoms were of the gravest possible character; temperature ranged between  $102.8^{\circ}$  and  $103.6^{\circ}$  F.; diplococci in sputum. On the sixth day, at 11.40 A.M., 30 cubic centimetres of serum injected. This was followed promptly by a rise of temperature to  $104.4^{\circ}$  F. Then it fell, reaching in fifteen hours  $101^{\circ}$  F., with a most gratifying change in the general condition. After this the temperature was irregular, ranging between  $101^{\circ}$  and  $104^{\circ}$  F., but it was thought that the symptoms lacked the extreme gravity of the period before the injection. It was not till the eleventh day that convalescence, which was afterwards moderately rapid, actually set in.

CASE XII.—Woman, aged forty-eight years; pneumonia of left lower lobe; symptoms of rather pronounced severity, temperature ranging between  $103^{\circ}$  and  $104^{\circ}$  F. On the sixth day 25 cubic centimetres of serum were injected, and a like quantity on the seventh day. Absolutely no effect was produced by the injections upon either the temperature or the general condition. The crisis occurred on the tenth day, and convalescence was probably rather more rapid than the gravity of the attack would have warranted.

CASE XIII.—In Philadelphia Hospital. Man, aged fifty years; pneumonia of right lower lobe; condition not at all good; diplococci in sputum. On the fifth day 15 cubic centimetres of serum injected. On the sixth day injection repeated, this time 25 cubic centimetres being used. Neither injection had any effect upon the temperature. Crisis occurred on the ninth day. From the time of the last injection the man complained of pain and soreness at its site,—on the outer aspect of the thigh. This spot afterwards became inflamed, indurated, and eventually the seat of an abscess, which was extremely slow in healing. There was no evidence of any systemic involvement from this abscess, and convalescence from the pneu-

monia went on uninfluenced by its occurrence.

CASE XIV.—In Philadelphia Hospital. Man, aged thirty years; alcoholic pneumonia; symptoms of extreme gravity, temperature ranging between  $101^{\circ}$  and  $102^{\circ}$  F.; diplococci in sputum. On the fourth day, at 4 P.M., 25 cubic centimetres of serum injected. Twelve hours later the temperature had dropped to  $100^{\circ}$  F., where it remained till 8 P.M. of that day (the fifth of the disease), when 17 cubic centimetres were injected. Six hours later the temperature had fallen to  $99.4^{\circ}$  F. For the next two days it ranged between  $99^{\circ}$  and  $100^{\circ}$  F., then it rose rapidly and the man died, the temperature at the moment of death being  $108.2^{\circ}$  F. No effect whatever upon the general condition had accompanied the lowering of the temperature following the injections. A short time before death a marked discoloration developed about the site of the second injection, persisting even after death.

Now, what deductions can be drawn from this series of cases? In the light of our experience with the first case injected, together with the results in other published cases, we must confess to a most distinct disappointment. In Cases I. to X. the serum used was apparently as perfect for its purpose as could be wished. It would be a useless expenditure of space and time to particularize the cases whence the serum was obtained; a careful study of them has enabled us to formulate no rules governing its irregularity of action. Suffice it to say that they were all cases of undoubted and typical pneumonia, in every one of which the presence of virulent diplococci had been established. In none of them was the interval which was permitted to elapse between the crisis and the taking of the serum more than two weeks; in many of them it was less. Having these serums, then, obtained under identical circumstances, it was surely to be expected that perfectly regular and definite results would follow their use, but the event proved otherwise. While some of the cases were marked successes, others showed equally pronounced failures. Thus, of the ten cases, only five can be claimed as distinctly proving any effect due to immune serum. In another (Case V.), while a crisis did occur following the injection, yet the time that elapsed before its completion (thirty-six hours) renders it doubtful that this effect was due to the serum, and the fact that an early crisis is not at all uncommon in children strengthens this doubt.

Of the three cases where no result was shown, in Case I. we are tempted to attribute

the at least partial failure to the fact that it was in a negro. Seeing that the diplococci in a negro's sputum seem to be so distinctly more virulent than those in the sputum of a white man, it may be imagined that the same holds good in the lungs, and that a larger dose of antidote would be required. It is possible that, had the first dose been larger or been followed by others, a conclusive result would have been obtained. It seems to be a fact, judging from experiments upon lower animals, that the more virulent the bacteria the less easily antiodoted is their toxine. But if the failure here was due to exceptional virulence of bacteria and consequently large amounts of toxine, we should expect an exceptionally pronounced immunity, granting that toxins have anything to do with immunity; and yet, as will be seen later, the serum of this man rapidly lost its antitoxic power. Case III. may be explained by the seeming irregularity of the pneumonia, though, on the other hand, diplococci—that crucial test—were present in abundance. From a careful study of the case, in the light of the symptoms and of the post-mortem examination, I am strongly of the opinion that such explanation is not sufficient, and the case must be classed as an unquestioned failure. In Case IX. no explanation whatever of the failure can be offered. Everything was favorable to the action of the serum. The man came under observation immediately after the initial chill, the general treatment was carried out under most favorable auspices, the quantity of serum used (110 cubic centimetres) was certainly large enough, and yet blank failure resulted: immune serum did not antidote the toxine.

Can we reconcile these discrepancies? It would seem not in the present state of our knowledge. That the irregular results were due to causes inherent in the persons of those injected, essential variations in disease processes, or subtle radical differences in constitution, and not to faulty conditions of the serum, is proved by the fact that different results attended the use of the same serum. Thus, Cases II. and III. had the same serum; II. was a success, III. a failure. Again, Case IV. showed a pronounced success, V. a doubtful result.

The lack of action of immune serum in certain cases might be explained on the assumption (1) of a duality of diplococci causative of pneumonia, (2) of a variation in the toxins, (3) of the inadequacy of the antitoxic theory to fully explain the cure of pneumonia and the subsequent immunity.

1. *The Duality of the Diplococci.*—While we are still not perfectly familiar with the life his-

tory of the specific cause of pneumonia, yet what work has been done and comparison with other specific diseases render this hypothesis only remotely probable.

2. *Variation in the Toxines.*—Bacteria, in the course of their growth, produce at least three distinct classes of poisons, the individual action of which is not definitely understood. These toxins being somehow instrumental in the production of the fever, it is on their neutralization or disappearance that the end of the fever depends. But these toxins are constant concomitants of the growth of bacteria, and while, under differing conditions of inherent qualities or environment, it is possible that the toxins are secreted in varying proportions, yet it is not likely that the average proportions would ever be so rudely disturbed as to lead to total failure of a neutralizing agent to act. The toxins must always be the same. It requires too violent a stretch of the imagination to conceive that under practically identical conditions of production in some few aberrant cases an entirely unusual toxin had been substituted. Therefore this hypothesis is not to be entertained; and this, then, brings us to consider,—

3. *The Inadequacy of the Antitoxic Theory.*—This theory proposes a purely chemical action, and, granting that there is a single specific cause for pneumonia and that the toxins produced are always the same, if there be a definite antipneumotoxine, must not its action be the same in all cases? Let us draw attention here again to the probable difference between cure and immunity. Cure, or the disappearance of fever, means the destruction of the fever-producing toxins; immunity, the impossibility of bacterial growth or failure of secreted toxins to produce deleterious effects. Are these two cases necessarily identical? We are driven to the conclusion by consideration of these cases reported that they are not; the neutralization is merely a step in the production of immunity, and its causes will have to be sought deeper down. At the same time there may be a neutralization of poison by substances in the immune serum, but these substances may exist only in the serum and not in the plasma, and really not be concerned in the production of immunity.

While, therefore, it cannot be doubted that immune serum may have a most pronounced effect, yet the irregularity of its action certainly suggests strongly that there are important factors other than the antipneumotoxine concerned in the production of the crisis and the subsequent immunity. What these factors may be it is impossible to indicate, but it would seem

probable that they are to be found rather in some condition of the cells than of the blood-serum.

One thing in these experiments we have been most certainly unable to do,—that is, to duplicate the results published by several observers obtained by very small quantities of serum. In the only case where we ventured to use so small quantity as 2 cubic centimetres (that of the child, where surely a small quantity would be most likely to be sufficient), the result was practically negative.

We have considered hitherto only the first ten cases, where only perfect serum was used; the other cases were injected with serum which might be supposed *a priori* to have a less definite effect. In Cases XI. and XII., and in the first injection in Cases XIII. and XIV., the serum was obtained from a case of abortive pneumonia, the crisis having occurred on the third day. The case was one of unquestioned pneumonia, diplococci being present in great abundance in the sputum. Such abortive pneumonia can be best explained by the incidence of pneumonia on a case almost but not quite immune naturally, and were the antitoxic theory correct, one should expect a most marked effect, instead of which the results were all purely negative, except in Case XI., where the result was at least doubtful. This would bear out what has previously been found to be the fact, that naturally immune serum does not protect, and strengthen the hypothesis of different methods for the production of immunity.

In Cases XIII. and XIV. the serum used was obtained from Case I. (the negro) five weeks after his crisis. Within two weeks after his crisis he had been bled and the serum used with a successful result, but in these two cases the result was negative. Therefore, if these two cases prove anything, serum which was at first actively protective may lose its antitoxic power after the lapse of five weeks.

From a therapeutic stand-point the results of the injections are disappointing. In the ten cases where perfect serum was used there were three deaths. As this is about the ordinary death-rate in pneumonia, as a treatment purely of pneumonia serum injection would scarcely commend itself. With the imperfect serum the death-rate was about the same,—one in four.

The injections are, however, if carried out with proper precautions, perfectly harmless. In none of the cases, either of pneumonia or typhoid fever, were any bad general effects noted. In two cases (XIII. and XIV.) there was local inflammation following the injection, but as the serum used was obtained from one

man at the same time, and as, owing to the fact that it was not obtained under our personal supervision, it was in all probability contaminated, this result might have been avoided. One word of caution here about the serum: it must not be obtained from a case where there is any suspicion of kidney-lesion, for we have found\* that serum drawn from victims of Bright's disease is capable, when introduced intravenously into dogs, of producing nephritis.

*Typhoid Fever.*—Stern† has found that white mice injected with a mixture of typhoid bouillon with serum from a recent convalescent from typhoid fever survive, while those treated with unmixed bouillon die. This would seem to indicate some antidotal properties in the serum. Though it is scarcely to be supposed that from two diseases so dissimilar as typhoid fever and pneumonia the same result would be obtained by the injection of immune serum, yet the following experiments were undertaken with the hope that some effect would become apparent. The serum obtained was from convalescents in whom somewhat less than two weeks had elapsed since the end of the fever. It was obtained by means of venesection.

CASE I.—In Philadelphia Hospital. Man, aged thirty years; case of average severity; mild nocturnal delirium; bowels moderately constipated; heart strength well preserved. The history and symptoms pointed to the ninth day as the day on which he came under observation. The temperature would have ranged probably between 102° and 104° F., but sponging and bathing kept it between 100° and 103° F. On the twelfth day, at 7.15 P.M., 60 cubic centimetres of serum were injected. At midnight, after sponging, the temperature was 98.4° F.; previous to the injection it had never been reduced by sponging or bathing below 100° F. This seemed to inaugurate the gradual defervescence of the temperature. On the fifteenth day it reached normal in the morning, and from the twenty-second day on it was permanently practically normal. Convalescence was rapid.

CASE II.—In Philadelphia Hospital. Boy, aged nineteen years; first seen on seventh day; light case; very slight nocturnal delirium; two or three stools a day; heart quite weak; temperature ranged between 100° and 102° F. On the twelfth day, at 7 P.M., 20 cubic centi-

\* Boylston Prize Essay, to be published in the American Journal of the Medical Sciences.

† *Deutsche Med. Wochenschrift*, September 15, 1892.

metres of serum injected. 11 A.M. next day temperature  $98.4^{\circ}$  F.; then it rose to  $101^{\circ}$  F. Injected again at 5.15 P.M. 20 cubic centimetres. 2 A.M. next day temperature  $98.4^{\circ}$  F.; then it rose till at 6 P.M. it was  $100.4^{\circ}$  F., when he was again injected with 20 cubic centimetres of serum. After this the temperature rose till at 9 P.M. it was  $101.8^{\circ}$  F. It slowly settled after that, and convalescence set in on the eighteenth day.

CASE III.—In Philadelphia Hospital. Boy, aged eighteen years; came under observation on the eighth day; case graver than the preceding; quite marked delirium; heart rather weak; very slight diarrhoea; temperature ranged between  $102^{\circ}$  and  $104^{\circ}$  F., but could be depressed to  $99^{\circ}$  F. by sponging. Injected as follows: twelfth day, 10 cubic centimetres of serum; thirteenth day, 10 cubic centimetres; fourteenth day, 25 cubic centimetres. No effect was apparent on the temperature till the fifteenth day, when it ranged between  $100^{\circ}$  and  $101.8^{\circ}$  F. It gradually fell after that, remaining at normal from the twentieth day on.

These cases were none of them especially grave, and would certainly have recovered in the natural course of events. The type of typhoid fever prevalent was mild and irregular, and these cases were selected as being the gravest and most typical obtainable at that particular time. Some of the companion cases ended as early as the end of the third week, and it may be that the cases above recorded ran a normal course uninfluenced by the injections. Still, it is unusual to have three consecutive cases of typhoid fever terminate as these did on the twenty-second, eighteenth, and twentieth days respectively. If the serum had any immunizing effect, it acted as would have been expected, not by producing any sudden fall of temperature, but by bringing on the gradual termination of the fever sooner than it would otherwise have occurred. In spite, then, of the mild nature of the cases and the somewhat irregular action of the serum, we are inclined to the opinion that the serum had some effect. It is unfortunate that it could not have been tried upon some severe cases.

It affords us great pleasure to express our thanks to Drs. J. H. Musser, D. F. Woods, and J. P. C. Griffith for their kindness in placing at our disposal cases of pneumonia under their care in the Presbyterian and St. Agnes Hospitals, and to the resident staff of the Philadelphia, Presbyterian, and St. Agnes Hospitals for assistance in the observation of the cases.

## THE PHYSIOLOGICAL ACTIONS OF ALCOHOL.

ABSTRACT OF A PAPER PRESENTED TO THE SECTION ON THERAPEUTICS OF THE FIRST PAN-AMERICAN MEDICAL CONGRESS, HELD AT WASHINGTON, D. C., SEPTEMBER 5, 6, 7, AND 8, 1893.

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(Concluded from page 309.)

### ON DIGESTION.

IT is almost an established fact that alcohol in small doses aids the process of digestion. This may not be an absolute rule, but it certainly holds good in the large majority of cases.

It is true that some observers deny to alcohol any such action, but on examining the clinical literature of this part of the subject (which is certainly, to say the least, an extensive one), it is found that those who uphold this latter view form the minority.

Buchner,\* from the results of a series of experiments, comes to the conclusion that ten per cent. of alcohol does not affect artificial digestion, while beer, even when used in dilute form, retards the process. His assertions, however, have not been absolutely confirmed. It is true that Gluzinski,† who gave the drug to fasting individuals, found that digestion, as influenced by alcohol, may be divided, in the case of healthy persons, into two phases: the first characterized by marked retardation of proteid digestion, the nitrogenous materials failing to be changed into peptones until the alcohol was removed; the second stage beginning after the removal of the drug, when the secretion of gastric juice is so abundant that in the end the food is digested as soon or sooner than if no alcohol had been administered.

On the other hand, Mohilansky‡ affirms that alcohol, taken in small quantities, distinctly improves the appetite and gives rise to a marked increase in the assimilation of the nitrogenous constituents of food, this increased assimilation being due to a more complete absorption and intensified gastric digestion, resulting, as has been stated elsewhere, from a prolonged retention of food in the stomach on the one hand, and from increased digestive power and secretion of the gastric juice on the

\* *Deutsch. Archiv f. Klin. Med.*, Bd. xxi. S. 537.

† *Ibid.*, and *Annual of the Universal Medical Sciences*, 1888.

‡ *Loc. cit.*

other. Blumenau\* has arrived at similar conclusions. This investigator, with the view of studying the action of alcohol on the functions of the stomach, made a series of experiments upon five healthy individuals, aged from twenty-two to twenty-four. The observations were made in the clinic of Koshlakoff, of St. Petersburg. The drug was given from ten to twenty minutes before dinner, in doses of 100 cubic centimetres ( $3\frac{1}{2}$  ounces), and in the form of solutions of the strength of from twenty-five to fifty per cent. The meals allowed consisted of from 500 to 600 grammes (16 ounces) of soup, a cutlet weighing 90 or 100 grammes ( $2\frac{1}{2}$  to 3 ounces), and 200 or 250 grammes (6 to 8 ounces) of wheat bread. The author found that during the first three hours after the ingestion of the alcohol the gastric digestion is distinctly retarded, which is caused by a marked diminution of the digestive power of the gastric juice. The diminution is dependent upon the decreased proportion of hydrochloric acid and the general acidity of the gastric juice; this acidity is almost entirely produced by lactic acid. In habitual drinkers the changes are less pronounced than in alcohol abstainers. All other conditions being equal, strong solutions of alcohol give rise to more intense changes than weak ones. The investigator found, further, that during the fourth, fifth, and sixth hours after meals the gastric digestion becomes considerably more energetic, the general acidity of the juice rises from .22 to .35 per cent., and the proportion of hydrochloric acid increases, to reach its maximum (from .12 to .14 per cent.) by the end of five hours after meals, while the lactic acid amount decreases correspondingly, attaining its minimum about the same time, when the acid either gives but a very faint reaction or altogether ceases to give any reaction. Corresponding to the alterations, the gastric juice during the second stage acquires a far higher digestive power. Under the influence of alcohol, the secretion of the gastric juice becomes more profuse and lasts longer than without alcohol. During the first hour the action of pepsin seems to be slightly decreased, because, on adding rennet to cow's milk, it coagulates more slowly than in subsequent hours. In regard to the motor power of the stomach, such was ascertained to be somewhat decreased, as tested by the internal administration of salol, according to the method of Ewald. The same may be said in regard to the absorptive power of the organ, in which

case the decrease was determined by the administration of the iodide of potassium. It was found that the intensity of the alteration in the motor and absorbing powers of the stomach corresponds to the concentration of the alcoholic solutions employed.

Of course, in large amounts alcohol hinders digestion very decidedly, and the continuous use of the drug causes pathological changes of varied nature, the principal one of which is that produced upon the liver. That alcohol is a powerful factor in the production of hepatic cirrhosis there is scarcely any doubt. This has recently been confirmed by the results obtained by De Rechter† in an experimental research. The investigator made a series of experiments on dogs and rabbits. After having ascertained the amount of alcohol used by hard drinkers, he administered to the animals employed a mixture consisting of 22.5 parts of ethylic alcohol at 96° F., 2.5 parts of methylic alcohol, and 75 parts of water. Of the ten rabbits and four dogs used, one dog and four rabbits lived long enough to be of use to the experimenter; in the rabbits he found cirrhosis in the portal spaces. In places, bands of connective tissue were found uniting the portal vein with the sublobular veins, but the parenchyma of the organ was everywhere free from change. In the dog there was cirrhosis occupying the sublobular veins, where alcoholic cirrhosis is said by Sabourin to commence in man. De Rechter attributes this difference in development to some modifying influence of the alcohol exercised by the liver of the rabbit. If experimenters have found fatty and cirrhotic change in many cases, the author attributes it to the fact that they used alcohol too short a time and in too large doses.

Be all the results of these researches as they may, certain it is that in the test-tube the digestion of food is retarded or inhibited by the addition of alcohol; yet, in the stomach, on the contrary, alcohol aids digestion, not, perhaps, through any inherent powers of its own, but mainly by virtue of its irritant and stimulating properties, inducing in this manner an increased amount of gastric juice.

#### ON THE URINARY SECRETION.

How alcohol affects the urinary secretion has not been definitely determined. Mohilansky‡ found that the drug, in healthy people, does not possess any diuretic action; but that, on the contrary, it rather tends to inhibit the

\* *Wratsch*, No. 42, 1889, and *Med. Chronicle*, January, 1889.

† *La Presse Médicale de Belge*, June 19, 1892.

‡ *Loc. cit.*



elimination of water by the kidney. Diametrically opposed to this statement is that of Diakonoff,\* who observed that alcohol, in febrile patients, considerably increased the daily quantity of urine, markedly suppressing at the same time the aqueous loss through the lungs and by the skin.

From a few experiments performed upon myself, I have noticed that small quantities of alcohol almost always cause an increase in the daily amount of urine secreted. The action under consideration, however, cannot be accurately ascertained, since it must depend not only upon the amount of alcohol ingested, but also upon the condition of the individual, whether this be in a healthy or a febrile state.

It is not at all improbable that if, in a healthy person, the amount of alcohol administered be sufficient to stimulate the circulation, a corresponding activity of the kidneys would be obtained as a consequence of the generally increased arterial pressure. On the other hand, since alcohol in large doses, as has been noticed, tends to markedly decrease the arterial pressure, accompanied by a probable dilatation of the cutaneous blood-vessels, according to Mohilansky, it would naturally be expected that such a phenomenon would favor perspiration and thus interfere with the renal secretion.

The same results might be witnessed in febrile conditions, in which, as has been observed by Diakonoff, the drug, by causing a suppression of watery excretion through the lungs and skin, and undoubtedly a stimulation of the general circulation, produces a marked increase in the daily amount of urine secreted. The question, in the present state of our knowledge of this part of the subject, remains unanswered one way or the other.

#### WHAT BECOMES OF ALCOHOL IN THE ANIMAL ECONOMY?

The last point which I propose to discuss in this paper is that relating to the fate (as the French would have it) of alcohol in the animal economy. This subject naturally deals with the elimination of the drug. Is alcohol eliminated as such, or does it undergo oxidation, as is maintained by a probable majority of writers upon this question? This is certainly of paramount importance, for here lies the basis of the value or the harmfulness or unnecessary use of alcohol in the treatment of disease. Again, not only may it be asked, Is alcohol a general stimulant? but also, Does the

drug likewise serve the purpose of a food? These questions, although long-mooted ones, deserve the most careful consideration.

It has for a long time been held that alcohol is completely, or nearly so, burnt up in the system. But in the celebrated work of Duroy, Lallemand, and Perrin it is stated by these authors that alcohol is eliminated unchanged, basing their assertion on the fact that they could not find in the blood or in the tissues the products of alcohol oxidation, such as acetic acid and aldehyde; and on the fact, also, that they found the alcohol unchanged in the expired air, in the urine, and in the sweat. These authors relied on the chromic-acid test, which is said by Binz† to be fallacious. Binz, assisted by Stenbach and Schmidt, in a series of experiments, could not detect alcohol in the breath, affirming, therefore, that no drug was expelled by the lungs. He attributed the odor noticed in the breath of heavy drinkers to the ethers and other volatile principles of the various liquids ingested.

Baudot‡ also questioned the correctness of the statements of Duroy and Perrin, on the ground that the chromic-acid test is so delicate as to reveal the presence of .165 of a grain in a quart of water. He further noticed, in twenty experiments performed, that, unless it be ingested in enormous amounts, alcohol is practically not eliminated by the urine. These results have been confirmed later by the researches of other investigators, as Anstie,§ Schulinus,|| and Lieben.¶ Schulinus showed that only very small quantities of alcohol pass through the kidneys, the largest portion of the drug taken into the blood finding its way into the tissues and organs by exosmosis; and in a number of experiments he found that one-fourth of the alcohol administered had disappeared from the body after from two hours to three hours and fifteen minutes. From the fact, again, that only a trifling amount of the drug was eliminated by the kidney, the author arrived at the conclusion that the alcohol given must have been burnt up in the system. The same conclusions are formulated by Lieben and Anstie. This latter investigator detected a small quantity of alcohol escaping from the lungs.

Thudichum, quoted by Wood,\*\* first in 1864

† *Loc. cit.*

‡ *L'Union Médicale*, 1863.

§ *Loc. cit.*

|| *Archiv der Heilkunde*, 1866.

¶ *Annal. der Chim. und Pharm.*, ii., 1870, Suppl. Bd. S. 236.

\*\* *Loc. cit.*

\* *Loc. cit.*

and later in 1866, in collaboration with Dupré,\* carried on two elaborate researches on the same subject. In the first investigation the experiments were performed upon thirty-three men, to whom he administered four thousand grammes of alcohol. The drug was recovered from the urine of all the men by repeated distillation, in order to avoid the fallacies of the chromic-acid test. In this manner the experimenter obtained from the urine, within six hours after the ingestion of the drug, only .25 per cent. of the amount of alcohol given. Identical and perhaps more accurate results were obtained by the same observer in his second investigation. In this instance greater care was taken to avoid loss during distillation, and he then recovered from the urine .82 per cent. of the alcohol administered.

This experimentation was repeated by Subbotin† on six rabbits. This investigator claims to have demonstrated that the elimination of alcohol continues for a longer period than is generally believed, and that twice as much of the drug escapes through the skin and lungs as by the kidneys. His results, however, do not disprove those of the observers just mentioned, since he employed very large amounts of alcohol, in which case the elimination must be in direct proportion to the quantity ingested, for certainly a limit to the powers of the system to oxidize alcohol must be expected.

In a series of experiments, Edes‡ observed that elimination of alcohol is greater by the lungs than by the kidneys, after small amounts, the contrary taking place under large doses of the drug. Not much weight, perhaps, can be attached to these statements, from the fact that the author relied chiefly on the chromic-acid test. But Anstie,§ in a second series of experiments upon dogs, using the method employed by Subbotin, confirmed the results obtained in his (Anstie's) first investigation. He found but a very trifling amount of alcohol left in the body. Similar results have been obtained by Bodländer|| from experiments performed upon himself and on dogs. His studies have been repeated and his observations apparently confirmed by Wöhler.¶ Bodländer found, by experiments on himself, that elimination

occurred by the kidneys to the extent of 1.2 per cent. and by the lungs to 1.6 per cent. of the amount of alcohol ingested. In the dog, he recovered from the urine 1.6 per cent. and from the breath two per cent. No alcohol was detected by this experimenter in the intestinal excretions, nor in the milk of a goat to which nearly a quart of brandy had been administered.

It was first discovered by Lieben,\*\* and afterwards by Dupré†† and Bechamp,‡‡ that a body closely resembling alcohol occurs in the urine of habitual abstainers. Indeed, Bechamp was able to get from the urine of persons who had not taken the drug in any form for a long time alcohol in sufficient quantities to burn it. Lieben found the same substance also in the urine of the dog, the horse, and the lion, and Rajewski§§ in that of the rabbit.

It seems to have been proved, from the results of the foregoing experiments, that alcohol exists in the healthy organism, and therefore the detection of the drug in the different secretions and excretions, after its ingestion, is no proof that alcohol does not undergo oxidation in the economy. It is true that so far no products of oxidation have been found in the blood, but in this case it is reasonable to suppose that the process of oxidation goes on continuously, without interruption, until the production of water and carbon dioxide occurs as the ultimate result of such oxidation.

The elaborate and excellent researches of Ford||| tend to confirm the theory of the oxidation of alcohol in the animal economy. This investigator studied the subject on the supposition that the sugar manufactured by the liver must, before its final destruction and conversion into carbon dioxide and water, be changed into alcohol. This in mind, he carefully examined large quantities of blood of animals, seeking to obtain alcohol from that fluid by a process of repeated distillation. To prove that the substance obtained from blood in this manner was alcohol, the author employed the chromic-acid test, and relied also on the inflammability peculiar to alcohol, and similarly on the optical appearance of this substance in the conducting tube at the time the distillate began to boil. Again, to prevent possible oxidation of the alcohol during this delicate process, Ford sometimes added sulphuretted hydrogen.

The experimenter then proceeded to examine

\* "Tenth Report of the Medical Officer of the Privy Council." London, 1868.

† *Zeitschr. f. Biolog.*, Bd. vii., 1870; and *Schmidt's Jahrb.*, Bd. cliv. S. 261, 1872.

‡ *Boston Medical and Surgical Journal*, p. 347, 1872.

§ *Practitioner*, July, 1874.

|| *Archiv f. Physiolog.*, Bd. xxiii.

¶ *Journal de Progrès*, t. xi.

\*\* *Loc. cit.*

†† *The Doctor*, February 1, 1873.

‡‡ *Lancet*, 1873.

§§ *Arch. f. Physiolog.*, Bd. xi. S. 122, 1875.

||| *New York Medical Journal*, January, 1872.

various other tissues as substances to be distilled, and here he based his calculations on the amount of carbon taken in and that exhaled, especially in regard to the quantity of alcohol to be found in the blood of the pulmonary capillaries. Thus he determined the quantity of alcohol respectively from the capillary blood of the lungs, from fresh lung-tissue, from putrescent lung-tissue, from fresh thoracic blood, from putrescent thoracic blood, from fresh liver-tissue, and from putrescent liver-tissue.

An examination of the figures given in Ford's original table reveals the interesting and important fact that the smallest quantity of alcohol was obtained from fresh liver-tissue and the greatest amount from putrescent liver-tissue. This appears to show that in the latter instance the glycogen must have undergone fermentation. The same is seen in regard to the quantity of alcohol extracted from fresh and from putrescent thoracic blood.

An unbiased examination of all the preceding investigations appears to clearly demonstrate that but a very small quantity of alcohol is eliminated as such from the organism. The drug must, therefore, be oxidized in the body, thus serving the purpose of a food and in this manner generating force. This is the case, according to Dupré,\* who has shown that one gramme of alcohol oxidized in the organism yields 7184 heat-units, while the same weight of lean beef evolves 1482 heat-units only. The inference is obvious. Further estimates have demonstrated that two ounces of alcohol generates a force equal to that generated by a little over nine ounces of lean beef, this latter being sufficient to maintain the circulation and respiration of an ordinary adult man per day. The results of these calculations seem to be supported by the able experiments of Reichert.†

It must, therefore, be concluded that alcohol, so far as our clinical and experimental knowledge goes, is mainly destroyed in the system, generating vital force, and that it ought to be considered as a food.

#### CONCLUSIONS.

I shall now, to close this imperfect study of the actions of alcohol, give a summary of the conclusions which I have been able to draw, and which will be found scattered throughout the preceding pages. They are as follows:

1. Alcohol in small amounts excites and in

large doses depresses both the peripheral motor and sensory nerves.

2. Excessive quantities cause a spiral degeneration of the axis-cylinder of nerve-fibres.

3. Reflex action is at first increased and afterwards diminished by an influence exercised by the drug upon the spinal cord and the nerves.

4. In small amounts the drug stimulates the cerebral functions; it afterwards, especially in large quantities, depresses and finally abolishes them.

5. Alcohol causes lack of co-ordination by depressing both the brain and the spinal cord.

6. In toxic doses alcohol produces hyperæmia of both brain and spinal cord, especially of the lumbar enlargement of the latter.

7. Small doses of alcohol produce increased rapidity of the cardiac beat; large amounts, a depression of the same. In either case the effect is brought about mainly through a direct cardiac action.

8. The drug in small quantities causes a rise of the arterial pressure by a direct action upon the heart; in large amounts it depresses the arterial pressure similarly through a cardiac influence.

9. In large doses alcohol enhances coagulation of the blood; in toxic quantities it destroys the ozonizing power of this fluid, causing a separation of the hæmoglobin from the corpuscles.

10. Alcohol in small doses has little or no effect on the respiratory function; in large amounts it produces a depression of both rate and depth of the respiration through a direct action on the centres in the medulla oblongata.

11. The drug kills by failure of the respiration.

12. On the elimination of carbon dioxide alcohol exercises a varying action, sometimes increasing, sometimes decreasing, such elimination.

13. The action of alcohol on the amount of oxygen absorbed also varies and may be said to be practically unknown.

14. The drug lessens the excretion of tissue-waste, both in health and disease.

15. In small amounts alcohol increases the bodily temperature; in large doses it diminishes the same. The fall of bodily temperature is due mainly to an excess of heat dissipation caused by the drug.

16. Alcohol, in sufficiently large amounts, has a decided antipyretic action.

17. In moderate amounts alcohol aids the digestive processes.

\* *Practitioner*, vol. ix. p. 33, 1872.

† *Loc. cit.*

18. Alcohol diminishes the absorption of fats.

19. The drug exercises a varying influence on the amount of urine secreted, but it probably increases the activity of the kidneys.

20. In large doses, or when continuously used for a long time, alcohol produces cirrhotic changes of hepatic especially and paralysis of spinal origin. It also causes insanity, epilepsy, and other maladies.

21. Alcohol is mainly burnt up in the system when taken in moderate quantities, but when ingested in excessive amounts it is partly eliminated by the breath, the kidneys, and the intestines.

22. Alcohol is a conservator of tissue, a generator of vital force, and may therefore be considered as a food.

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### *NATURE, DIAGNOSIS, AND TREATMENT OF PERNICIOUS ANÆMIA.*

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WE cannot approach the study of pernicious anæmia in an intelligent manner without first of all determining exactly what group of cases we are to consider under this head; and we shall find that the vagueness of the term has led to not a few misconceptions regarding the natural history, the prognosis, and even the treatment of the disease. The concise and, to this day, most accurate description of the principal features of what we regard as pernicious anæmia, published by Addison in 1843, and more particularly ten years later, is one of the striking evidences of the keenness of this great physician's power of observation. "For a long period," he says, "I had from time to time met with a very remarkable form of general anæmia occurring without any discoverable cause whatever,—cases in which there had been no previous loss of blood, no exhausting diarrhoea, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease." And further on, "It makes its approach in so slow and insidious a manner that the patient can hardly fix a date to the earliest feeling of that languor which is shortly to become so extreme. The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than

wasted, the pulse perhaps large, but remarkably soft and compressible, and occasionally with a slight jerk, especially under the slightest excitement. There is an increasing indisposition to exertion, with an uncomfortable feeling of faintness or breathlessness on attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth, and waxy appearance; the lips, tongue, and gums seem bloodless, the flabbiness of the solids increases, the appetite fails, extreme languor and faintness supervene; breathlessness and palpitations are produced by the most trifling exertion or emotion; some slight œdema is probably perceived about the ankles; the debility becomes extreme, the patient can no longer rise from bed, the mind occasionally wanders, he falls into a prostrate and half-torpid state, and at length expires; nevertheless, to the very last, and after a sickness of several months' duration, the bulkiness of the general frame and the amount of obesity often present a most striking contrast to the failure and exhaustion observable in every other respect." This stands to-day as a faithful and accurate account of the disease; but we have learned that the disease is not always as obscure in its causal relations as Addison believed.

From the stand-point of our present knowledge four groups of cases are clearly distinguishable. Leber, Gusserow, and Channing pointed out the unquestionable relation of pregnancy and lactation to a first group of cases; while in a second the influence of intestinal parasites was clearly demonstrated by Sangalli and other observers in Italy, and by Bäumler, Schönbachler, and others in Germany. More recently a third group of cases has been reported, by the investigations of Fenwick, Nothnagel, Litten, Kussmaul, Henry and Osler, Kinnicutt, and others, in which degenerations of the gastric mucosa play an important part, probably causative, in the disease. Other causes of a less immediate nature, perhaps predisposing, have been assigned, but at least these three groups are definitely known and admitted. There is left a certain number of cases in which no etiological factors are discoverable, but in which the clinical manifestations are practically identical. Is the pathogenesis in these last cases similar or the same as in the first-named groups, and shall we include all four classes under the head of pernicious anæmia? The answer to these questions will, I think, require a little consideration of the nature of the disease as we now know it.

The study of the blood in pernicious anæmia

shows as the most important feature the great reduction in the number of the red blood-corpuscles. In cases of moderate severity there may be 1,500,000 per cubic millimetre, in the most serious as few as 143,000, as Quincke observed the day before the death of one of his cases. This remarkable decrease in the number of red corpuscles must result either from decrease in the production of the red corpuscles, from increased destruction, or from a combination of the two. Now, I intend to show that in pernicious anæmia the important factor is hæmolytic, but that faulty hæmogenesis plays a part; that the gastro-intestinal tract is the seat of the destruction, or at least the source, of the hæmolytic agents; and, finally, that since the four above-named groups are similar in the condition of the blood, in the pathogenesis, and in their pathological tendency, it is more accurate scientifically to place them together as comprising the condition pernicious anæmia. Many modern writers place the apparently causeless cases apart as true "Addisonian pernicious anæmia," regarding the other cases as severe secondary anæmias; but there is much and good reason to believe that all cases are secondary, and there is a manifest advantage in practical medicine in holding to this view and regarding every case as one of obscure anæmia whose nature may be discoverable on close scrutiny. A rooted belief in the idiopathic or essential character of pernicious anæmia cannot but lead to neglect of careful search for hidden causes.

The later and, at the present day, most popular view of the origin of pernicious anæmia is that hæmolytic, or blood destruction, becomes increased beyond the powers of normal hæmogenesis to restore the blood. This view has been advocated by many writers, but none has done so much to bring it to the point of positive proof as Dr. William Hunter. The evidences of hæmolytic are found, in the first place, in the blood itself, in the numerous small, apparently fragmented, red corpuscles, in the decolorized corpuscles, showing merely the framework of the corpuscle, and, I believe, in the poikilocytes themselves. It is difficult to imagine these bodies as resulting from anything but destructive causes; but in themselves they would not constitute positive evidence. There are, however, resulting conditions which indicate the ultimate fate of the coloring-matter and other constituents of the blood-corpuscles after their disintegration. The most important of these, and one which, so far as we now know, is peculiar to pernicious

anæmia, is the deposit of iron-containing pigment in the outer zones of the hepatic lobules. This increase of iron in the liver was first observed by Quincke, and later by Rosenstein, Peters, Hunter, Burr and Griffith, Scott, and others, and in some of its features is perhaps characteristic of pernicious anæmia. It results, as Hunter has recently shown, not from the hæmolytic action of the liver itself, but from the storing up of the pigment matter after its liberation in other parts of the portal circulation. The yellow pigmentation of the skin and eyes is doubtless of similar nature. Not only is iron deposited in the liver in excessive quantity, but the amount discharged in the bile is generally increased, and the color of the urine has been found to be deepened by the presence of an altered form of urobilin. The fact that some cases do not show this increased color of the urine does not by any means diminish the importance of the observation when made. Destruction of white corpuscles, which their decreased number might lead us to suspect, is further evidenced, though not absolutely, by the excess of uric acid generally present in the urine; and it may well be that the fever of the disease is due to the same cause. Mott says that his experience warrants him in asserting "a constant relation between the pyrexia, the diminution in the red corpuscles, and the color of the urine." Finally, there is experimental evidence that pernicious anæmia may be the result of active hæmolytic, the anæmia resulting from injection of certain hæmolytic poisons, such as pyrogallol (Silbermann), into animals being strikingly like the natural disease as observed in man. These evidences I believe are sufficient to warrant the belief that hæmolytic plays a most important rôle in the pathogenesis of the condition under discussion.

The indications of faulty hæmogenesis are less numerous, though their existence cannot be doubted. In the first place, as Henry has pointed out, the large, flabby, ill-formed macrocytes of pernicious anæmia cannot but convey the impression that they result from some error in blood formation, and surely cannot be regarded as products of hæmolytic.\* With these must be ranked the nucleated red corpuscles, whose presence in the blood after hemorrhage, or after rapid blood destruction, is doubt-

\* Ehrlich has sought to show by their peculiar reaction to stains that they are degenerative in nature, but the studies of frog's blood by Gabritschewski indicate that the younger corpuscles present this peculiarity rather than the older and therefore more likely to be degenerated.

less an indication of partially unsuccessful efforts at restoration of the normal number of corpuscles. Finally, the lymphoid character of the bone marrow in pernicious anæmia is probably a consequence of the intense blood destruction, and results from the effort to supply corpuscles, as is the case, though to a less degree, in other forms of anæmia. Rindfleisch has studied this subject with particular care, and concludes that there is some obstacle in the way of the extrusion of red corpuscles from the hæmatoblasts of the marrow, which in consequence become greatly increased in number.

We have then, I believe, sufficient evidence to indicate that pernicious anæmia is both hæmolytic and hæmogenetic, but that the former process is the more important of the two.

As to the seat of the hæmolytic changes, we derive most information from those cases in which a distinct causal relation has been determined, and especially from the cases in which the gastro-intestinal tract is the seat of morbid lesions. Of the latter a great number has been recorded, though in some of the earlier cases the diagnosis of pernicious anæmia was not determined with the accuracy we could wish. Fenwick first pointed out a remarkable atrophy of the gastric mucosa and glands; Nothnagel observed cirrhotic contraction with disappearance of the glands; Nolen described a form of interstitial gastritis with atrophy of the glands; ulcers of the duodenum and stomach were found by Zahn and Litten; Homolle found simple duodenitis; while Banti, Sasaki, and others described changes in the sympathetic nerves and in the ganglia of the stomach walls. In the case of some of these lesions it may properly be urged, as has been done, that the anæmia was the cause of the gastric changes rather than the reverse; but in such instances as those of cirrhotic thickening of the stomach, with destruction of the mucosa, this explanation does not suffice. In a recent case under my own observation there was a history of marked gastric trouble for fifteen years, during which the patient remained in a fair state of health. Finally, the patient began to grow more anæmic, her blood and general appearance assumed the characters seen in pernicious anæmia; and on subsequent examination of the stomach a marked degree of cirrhosis, with partial destruction of the tubules, was discovered. Surely in a case of this kind the gastric lesions could not be regarded as secondary to the pernicious anæmia. The morbid conditions of the intestines with which pernicious anæmia has been found to be associated are similar to

those in the stomach; but attention has been directed more particularly to the influence exerted by intestinal parasites, particularly the *Bothriocephalus latus* and the *Anchylostomum duodenale*. In a few isolated cases other parasites were found,—*Ascaris lumbricoides* (Demme) and *Tenia saginata* (Eisenlohr),—but in these the diagnosis of pernicious anæmia is open to some doubt.

The manner in which these gastric and intestinal lesions bring about the anæmic condition of the blood must still be regarded as an open question, though we have undoubtedly reached a point where some measure of positiveness is justified. In the first place, it is, I believe, definitely ascertained that pernicious anæmia is a hæmolytic disease to a great degree, and that we cannot, therefore, regard the operation of the lesions described as being merely that of causes which interfere with proper nutrition. This may be a factor, but it is surely not the important one. Clinical observations and latterly experimental evidence, on the contrary, point to the development and action of poisonous substances within the intestinal tract, which by their hæmolytic action outrun the blood-making powers. A remarkable case of Sandoz may be cited in this connection. This observer records an instance of marked and progressive anæmia, in which there were prominent gastric symptoms and great fetor of the breath, and which showed decided improvement in the gastric conditions, the breath, and the anæmia after repeated lavage of the stomach. A similar case has recently been reported by Meyer. Jürgensen observed a similarly pertinent case, in which marked anæmia rapidly disappeared after administration of purges and the discharge of immense numbers of the *Bacterium termo*. The question of the relation of the animal parasites of the intestines to the anæmic condition is less easily determined than that of such organisms as bacteria, but there is much in favor of the view that it is by the generation of hæmolytic poisons, either in their natural growth or, as Schapiro claimed, from their death and decomposition. The belief that the anchylostomum causes anæmia by the abstraction of blood was attractive at first sight, but there are recorded cases of marked pernicious anæmia in which the worms were far too few to account for more than a trifling loss of blood. In addition, the discharge of the parasites is often followed by such rapid improvement in the symptoms that the conclusion that some source of intoxication has been removed seems well-nigh irresistible.

Finally, the important experiments of Hunter furnish additional evidence, in showing the active part the gastro-intestinal tracts may play in blood destruction when hæmolytic agents are administered. The poison employed by him was toluylendiamin. After injection of small doses the blood of the splenic vein alone showed hæmolytic changes; after large doses that of the mesenteric veins was also affected; and when the spleen had been removed, the chief hæmolysis was exercised in the intestinal circulation. Whether or not the spleen would play the secondary rôle in case of administration of poisons through the stomach must for the present remain conjectural. Enough is shown, however, to prove the importance of gastro-intestinal intoxication in its relation to hæmolytic anæmia.

Thus far we have considered only two of the groups of pernicious anæmia. The study of the puerperal cases is less satisfactory. No definite organic lesions have as yet been determined in these, and as a discussion of their nature could only be theoretic, they may be left out of consideration for the present. Suffice it to say that in this group, as well as in those cases in which no etiological factors of any kind are discoverable, there are the same indications of active hæmolysis in the blood, the secretions, and the organs as in the gastro-intestinal forms, and the clinical features are identical.

The rôle of hæmogenesis in pernicious anæmia, though of secondary importance and sequential, is doubtless an essential one. There must be some reason for the different effect of the same lesion in different individuals. Some persons may harbor the bothriocephalus or anchylostomum for years without the development of any unusual anæmia, just as certain persons manifest only gastric symptoms as a result of marked gastric atrophy. This difference in the state of the blood, I believe, depends more upon acquired or native deficiency in the hæmogenetic powers than in any obscure differences in the lesions themselves. This theory would furnish a ready explanation, as has been claimed by D'Espine and Picot, for the rarity of pernicious anæmia in children, in whom hæmogenesis, in common with other reparative processes, is more active than in older persons. It would harmonize with the clinical observations such as those I have cited before in the case in which pernicious anæmia was developed only after many years of gastric disorder and disease, and then ran a rapid course. Another interesting observation pointing to a natural deficiency in hæmogenesis was reported some years since by Luzet. A

girl who had been under the care of Jaccoud for chlorosis recovered entirely, but four years later, after her second confinement, came under the notice of Luzet with 781,200 red corpuscles to the cubic millimetre, and with a relative hæmoglobin value of 1.091. Doubtless, as Luzet claims, the disease was now pernicious anæmia. The previous chlorosis with subsequent pernicious anæmia are strong indications to my mind that there was here some original defect in the blood-making powers. Dr. Henry, in commenting on the above case, remarks that he had observed exactly the same conditions in one of his cases.

*Diagnosis.*—Before proceeding with the diagnosis it is important once more to set clearly before the mind the conception of pernicious anæmia which we have arrived at,—viz., that it is a form of intense oligocythæmia with a tendency to progressive deterioration, and certain definite symptoms, altogether irrespective of our ability or inability to find a distinct cause. The diagnosis, then, turns upon the character of the blood and the general symptoms, and not at all upon the absence or presence of etiological factors.

In an historical review of the study of the blood in pernicious anæmia we find a succession of observations each of which was in turn regarded as pathognomonic of the disease. One of the striking features on examination of the blood is the great irregularity in the shape of the red corpuscles,—the condition to which the terms poikilocytosis (Quincke) and schistocytosis (Ehrlich) have been applied. This was first found by Damon ("Leucocythæmia," Boston, 1864) in leukæmia, but was subsequently claimed by Quincke to be characteristic of pernicious anæmia. That this is not the case has been abundantly proved by the detection of marked poikilocytosis in cases of advanced carcinoma of the stomach, chlorosis, and other diseases. No more characteristic is the great difference in size of the red corpuscles, the existence of macrocytes and microcytes, and in particular of the small red cells of bright color and high refraction to which Eichhorst called attention in his work on pernicious anæmia, and which for a time were regarded as characteristic. All of these conditions are found in other intense anæmias, though, like poikilocytosis, less frequently and less distinctly than in pernicious anæmia. Another feature which has been falsely interpreted as pathognomonic is the mobile or amœboid character sometimes seen in the red corpuscles, but which has also been found in other diseases. The nearest approach to a characteristic condition is the rela-

tive excess of hæmoglobin, to which Hayem and Laache called particular attention. According to these authors and others after them, the blood of pernicious anæmia shows great reduction in the number of the red corpuscles without an equal decrease of hæmoglobin; so that the individual corpuscle is too rich in coloring-matter, though, of course, the actual decrease of hæmoglobin is very considerable. The presence of these conditions is doubtless practically diagnostic, but unfortunately we do not always find a relative richness in hæmoglobin. In four out of five cases of undoubted pernicious anæmia in which I have recently examined the blood, the reverse was the case, though the reduction of hæmoglobin was never much in excess of that of the number of corpuscles. The same observation was made in cases reported by Brakenridge, Dehio, Demme, and others. In all cases of genuine pernicious anæmia, however, the reduction in number of the red corpuscles is very considerable,—usually below 1,500,000. In two cases which I have recently examined, the examination of the blood showed 900,000 (eighteen per cent.) red corpuscles with ten per cent. of hæmoglobin, and 800,000 (sixteen per cent.) with thirty-five per cent. of hæmoglobin respectively. As a contrast to these figures I may cite the average result of the blood-examination in one hundred consecutive cases of gastric, intestinal, cardiac, nervous, pulmonary, and intestinal diseases, in which a certain degree of pallor led to examination of the blood. The average number of red corpuscles was 4,430,000 (88.6 per cent.), the average worth of hæmoglobin seventy-four per cent. The average of the five most anæmic of these cases was 3,820,000 (76.4 per cent.) red blood-corpuscles with 49.4 per cent. of hæmoglobin. In cases of gastric cancer the degree of anæmia, judging by the pallor of the skin, is often quite as marked as in bad cases of pernicious anæmia, but in three advanced cases I found the average result 2,890,000 (57.8 per cent.) red blood-corpuscles and thirty-one per cent. of hæmoglobin. In the four most decided cases of anæmia due to cardiac and arterial disease I have examined, the average was 4,210,000 (84.2 per cent.) of red corpuscles and forty-seven per cent. of hæmoglobin. In no case of the whole series were the red corpuscles reduced below 2,300,000, or forty-six per cent., and in none was there relative excess of hæmoglobin. The contrast between these figures and those given for pernicious anæmia is so striking as to need no further comment. Finally, Ehrlich has insisted upon the diagnostic significance of large red corpuscles contain-

ing nuclei, structures for which he proposes the name megaloblasts. These corpuscles, however, are not invariably present in pernicious anæmia, and they have been observed in other diseases attended with severe anæmia. I have seen them well marked in a case of purpura with large hemorrhages.

It is clear, therefore, that no one of the characters cited is pathognomonic standing by itself. On the other hand, a combination of all of them would make the diagnosis practically certain. In particular, I would urge that too much importance has been attached by physicians to poikilocytosis, one of the least important of the abnormalities named. What characters, then, can we regard as significant? My own observation leads me to regard as pernicious anæmia any case presenting suspicious clinical features in which the red corpuscles number less than 1,500,000 per cubic millimetre, and in which the hæmoglobin shows about the same proportionate reduction. The diagnosis becomes certain in cases in which the hæmoglobin is relatively in excess, and in which great alteration in the size and shape of the red corpuscles and the presence of large nucleated red corpuscles are observed. In addition to these characters of the blood, pernicious anæmia presents a train of clinical manifestations scarcely to be mistaken when present in their typical form. These symptoms have been so well described in the paragraph quoted from Addison that nothing further need be said on this head.

*Differential Diagnosis.*—Pernicious anæmia must be distinguished from cases of secondary anæmia, so called, especially from gastric cancer, and from chlorosis. In certain cases the striking symptoms from first to last refer to the heart or the nervous system, and may draw the attention away from the real disease.

The anæmia following hemorrhage is often intense, and the patient's face may have a deathly pallor; rarely, however, or never, in my experience, does it show the lemon color so frequently seen in pernicious anæmia. There is absence of the marked gastric symptoms and generally of the fever. It must be confessed that this last symptom is sometimes present in the anæmia of large hemorrhage, but it is exceptional. The history of the case leaves little doubt, pernicious anæmia rarely coming on abruptly. In any case, however, whether the anæmia had an acute onset after a large hemorrhage or a gradual development from repeated small hemorrhages, as in ulcer of the stomach, uterine or rectal hemorrhages, the character of the blood is sufficiently different



to make a positive diagnosis. In acute post-hemorrhagic anæmia the blood rarely shows less than 2,500,000 corpuscles and the hæmoglobin is rarely below forty per cent., death resulting in cases where greater loss of blood has been sustained. In cases of repeated bleeding the blood-count may be lower, but the hæmoglobin in these cases is nearly always disproportionately diminished. Blood-counts below 1,000,000 are exceedingly rare in such cases, as they are very common in pernicious anæmia.

The similarity in their clinical manifestations of some cases of gastric cancer to pernicious anæmia has often been remarked. The differential diagnosis is especially difficult in cases where the cancer is small and occupies the posterior wall of the stomach. In these the absence of a palpable tumor and of rapid emaciation makes the diagnosis often uncertain, as in the following case.

CASE I.—Mr. X., aged about sixty-three, had been ill for some time, complaining of gastric distress after eating, great weakness, and progressively increasing pallor. He never vomited, except occasionally after some distinct dietary indiscretion, and at such times the vomited matter presented no characteristic features. The patient came under my observation some months after his illness grew severe enough to prevent his continuing at his usual occupations. He was then decidedly pallid, the color being waxy,—neither the sallow hue of cancerous cachexia nor the lemon yellow of pernicious anæmia. He was somewhat, but not greatly, emaciated. The symptoms had grown decided, but no new ones developed. There were occasional elevations of the temperature to 99.5° or 100.5° F. in the evening. Physical examination revealed no thickening or induration in the region of the stomach. The stomach was not at all dilated. There was no pain at the stomach,—at most, discomfort after food. The examination of the blood showed 3,200,000 red blood-corpuscles and forty per cent. of hæmoglobin. The disease continued without much change of symptoms, but after four months a decided induration could be detected in the epigastrium, and after death, which soon followed, a small tabular, scirrhous carcinoma was found in the posterior wall of the stomach, near the pylorus, but not obstructing it. The stomach was not dilated.

The diagnosis in cases of this description is manifestly very difficult, and it will be seen how great a service was rendered by the blood-examination. The presence of a cer-

tain degree of emaciation was really the only point of service in the diagnosis, and this cannot be regarded as of great significance, as will be seen in the next case; neither was the absence of the lemon hue of the skin a certain indication. It may be fairly urged that the examination of the blood alone could be relied upon in instances of this kind.

A second case may be cited in which the symptoms of pernicious anæmia resembled those of cancer of the stomach. This case occurred in the practice of Dr. John Boger, with whom I saw it.

CASE II.—Mrs. X. Y., aged forty-seven years, ceased to menstruate three years previously. Her illness began apparently a year and ten months previous to her death and continued, with a single break of three months, progressively until her death. From the first she complained of marked gastric disturbances, especially vomiting. The matters ejected were reported to have been dark-colored, sometimes like coffee-grounds and at other times greenish, but there was never distinct blood. Dr. Boger never saw it otherwise than as yellowish or greenish liquid containing much mucus. The amount of vomiting was remarkable, often being repeated fifteen times during the day, and the average number being five times daily. The patient grew very weak, complained that she felt as if her heart was not beating, but did not have much actual dyspnoea or palpitation. She was habitually constipated. She is reported to have lost a great deal in weight (sixty pounds), but when I saw her a few weeks before her death she was not apparently emaciated; on the contrary, I noted the persistence of considerable subcutaneous fat, and the face was distinctly fleshy. The color of the skin and conjunctivæ was lemon yellow, the patient was weakened to the last degree, and the heart was extremely feeble, the sounds being muffled and toneless; a systolic murmur could be detected at the base and in the cervical vessels. The urine which was shown me was light in specific gravity, but darker than normal. The examination of the blood showed 800,000 red blood-corpuscles and thirty-five per cent. of hæmoglobin. Physical examination of the abdomen discovered a degree of resistance in the epigastrium, with some tenderness, but no definite tumor. The stomach was not at all dilated. She died soon after, but autopsy was not obtained.

In this case the onset of the disease, the persistence of marked gastric symptoms, and the rather characteristic vomiting warranted the suspicion of cancer of the stomach, and yet

in the later stages the appearance of the patient was enough to dispose of this diagnosis. The flabby fat with the lemon hue of the patient in themselves were strong points, for never, in an experience embracing quite a large number of cases of gastric cancer, have I seen the fat anything near so well preserved, and the yellowness of the skin in this case was very unlike the color we see in cancer, even when the liver is involved. With the examination of the blood the diagnosis was certainly unquestionable. Examination of the stomach contents could have given no reliable information, for free hydrochloric acid is frequently absent in pernicious anæmia, and the constant presence of this sign, even in cancer of the stomach, may be doubted. The slight induration in the epigastrium may have been due to a variety of causes, such as thickening of the walls of the stomach by interstitial gastritis, old gastric ulcer, and the like. It was not sufficient to constitute any evidence at all in favor of cancer, and probably was similar in nature to that found in a case of Dr. William Pepper's which I had the opportunity to examine recently during life and post mortem. In this instance the symptoms were almost identical with those in the case detailed, excepting that the vomiting was less pronounced and the vomita never brown in color. The blood-examination showed 300,000 red corpuscles and ten per cent. of hæmoglobin. There was the same induration in the epigastrium, and this was found, post mortem, to be due to thickening of the walls of the stomach near the pylorus, probably in some measure the result of an old healed ulcer, but largely to a diffuse cirrhosis.

The history of these cases illustrates rather well the points by which the two conditions—cancer of the stomach and pernicious anæmia—are to be distinguished, but one or two have not been alluded to. Not infrequently in the latter affection patients complain of discomfort or even considerable distress at the stomach, but rarely of the severe pain of carcinoma; and a tumor cannot, of course, be detected. In cases, however, where these distinct signs are absent, I should place most reliance on the presence of marked emaciation, of an ashy or sallow hue of the skin in place of a yellow tinge, and on the evidence of dilatation of the stomach. The character of the vomited matters and the presence or absence of free hydrochloric acid give us little assistance. Evening rises of temperature are more common in pernicious anæmia, but may occur in either. Finally, the examination of the blood is of signal importance. Rarely in carcinoma do

the corpuscles fall below 2,000,000, and the hæmoglobin is disproportionately reduced.

Chlorosis and pernicious anæmia would, at first sight, appear easily distinguishable, as, indeed, they are in most cases. There are some instances, however, of inveterate chlorosis in which the blood becomes progressively poorer and which eventually resemble pernicious anæmia very closely. This difficulty would be most marked in cases of *chlorosis tarda* or chlorosis in later life. Ordinarily, the great reduction in hæmoglobin with little diminution in the number of red corpuscles, together with the absence of marked poikilocytosis and of macrocytes, microcytes, and nucleated red corpuscles, render chlorosis easily recognizable. It is a mistake, however, to believe that the number of red corpuscles is never much reduced, as two recent cases of my own would prove. In one the examination showed 2,700,000 red blood-corpuscles with thirty per cent. of hæmoglobin; in the other, 2,270,000 red corpuscles and twenty-two per cent. of hæmoglobin. Even lower counts than this have been recorded. The age of the patient, the sex, the prominence of menstrual disturbances in many cases, and the absence, as a rule, of fever, usually give material aid in the diagnosis. In any case, however, in which the blood-count falls below our standard for pernicious anæmia (1,500,000 red corpuscles per cubic millimetre), and in which the reduction of hæmoglobin ceases to exceed that of the corpuscles, a transformation into pernicious anæmia might properly be suspected.

Reference has been made to the prominence of nervous symptoms in certain cases. This has been suggested prominently by the observation by Lichtheim, and after him by Minnich, Burr, and others, of organic changes in the spinal cord in this disease. The changes noted have been, in the earlier stages, small areas of hemorrhage or extravasation of blood, similar to those seen in the retina and in the serous surfaces, and in the later stages of system degenerations, especially in the posterior columns. The latter changes are probably in no way connected with the small hemorrhages. Unfortunately for diagnosis, these changes occur in other anæmic diseases, and the resulting symptoms are, therefore, of no value in diagnosis. In three cases I have examined, there was complete absence of the knee-jerk, and in two of them other symptoms which drew attention prominently to the nervous system.

CASE III.—Mr. O. B., a shoemaker, aged fifty-five years, came under observation complaining of progressive weakness and pallor and

of gastric disturbances. His illness commenced three months or more previous to my first visit, and made steady progress. The patient's habits were good, he had never contracted syphilis, and had never been seriously ill. He complained of pain in the region of the stomach, especially after eating, and occasionally he vomited. I was at once struck by the man's general appearance and by his gait. He walked rather slowly, with the legs far apart, and brought his foot down upon the ground flatly, as in locomotor ataxia. Sensation was somewhat slow in certain areas about the soles and the dorsum of the foot. The knee-jerks were entirely wanting and station was uncertain. There was no pain excepting in the stomach after food. The pupils responded normally in accommodation and to light. His face wore an habitual heavy, melancholy expression very like that in paralysis agitans, and, indeed, there was frequently a tremor in either thumb and forefinger, as in that disease. His mind was sluggish, and he could be aroused to interest in matters about him only with great difficulty. He was rather fleshy, the tissues being soft and flabby. His color was dead white, though for short periods it would assume a somewhat yellow appearance. The earlier examinations of the blood were unfortunately lost, but after some improvement in color and decided improvement in his general symptoms had taken place, the examination showed 2,000,000 red corpuscles and thirty per cent. of hæmoglobin. The patient first came under observation in May. In August he had retention of urine and had to be catheterized; subsequently cystitis developed. In spite of this, however, he improved slowly and presented a quite healthy appearance, and was free of the gastric symptoms the following winter. In the spring of the following year he again became anæmic, and afterwards passed from my observation.

In the second case there was loss of knee-jerks, somewhat ataxic gait, impaired station, and areas of diminished sensation in the skin of the feet and legs.

There may thus be marked nervous symptoms, due, no doubt, to changes in the spinal cord, but these symptoms never dominate the disease, and would not, therefore, obscure the diagnosis. In like manner, cardiac weakness, palpitations, or dyspnoea may be prominent symptoms, but their connection with the anæmic state is rarely doubtful.

*Treatment.*—The tendency of pernicious anæmia to a fatal issue must not lead to any laxity in treatment, for it is well known that temporary improvement may often be brought

about, lasting a few months or even years, and permanent cure seems to have been attained in some cases.

Byron Bramwell rendered a great service to medicine in calling attention to the value of arsenic in this disease. Sometimes the rapidity of the improvement following the use of this drug stamps it as almost a specific; in other cases, however, it seems entirely powerless. It is best given in the form of Fowler's solution, beginning with 2-drop doses and rapidly increasing to 10 drops, then more slowly to 15 or more. The remedy should always be given after meals. Frequently I have hesitated to administer it on account of gastric disturbances; but I have more often found in these instances that the gastric symptoms subsided after the drug was given than the reverse, and this has been the experience of others. It is true, however, that the stomach sometimes will not tolerate Fowler's solution or pills of arsenous acid. In urgent cases it may then be used hypodermically, but generally proves somewhat irritating. Under no circumstances should arsenic be pushed so far as to produce diarrhoea or other gastro-intestinal symptoms, as the loss of ground from an attack of diarrhoea may more than counterbalance the gain secured by weeks of judicious treatment. The tolerance of the drug is sometimes remarkable, but there is little need of increasing the dose beyond 15 drops, even when it is well borne. The value of arsenic in pernicious anæmia has been a little too well recognized, for it has at times led to a neglect of other measures almost as essential.

The patient should always at first be confined to bed, and should be required to use the bed-pan and urinal. The diet should be nutritious and easily assimilable. Meats should not be given too freely, on account of the diminished secretion of hydrochloric acid; nor, on the other hand, should sugars or starchy food be allowed in large quantity, from their tendency to fermentation. Symptomatic treatment is generally required to aid digestion and to allay gastric irritation. For the former purpose hydrochloric acid is often essential, and should always be tried where gastric fulness and fermentation are complained of. Where vomiting is severe I have found that small doses of bismuth subnitrate (5 grains) with cocaine ( $\frac{1}{10}$  to  $\frac{1}{12}$  grain) act more happily than any other remedies; and it has seemed to me that arsenic could be administered more freely and continuously with than without these adjuvants. They are best administered some time before the meal.

Our knowledge of the pathology of the dis-

case would indicate that measures should be taken to prevent putrefactive changes in the stomach and intestines and to minimize the absorption of poisons from this source. In the remarkable case of Sandoz the good effects of lavage of the stomach were most apparent, and Kaufmann and others report similar results.

Aside from the question of its influence on the disease itself, lavage may prove of great advantage in controlling obstinate vomiting and in improving the digestive power. There will generally be some difficulty at first, but after the patient has grown somewhat accustomed to the tube the stomach may be flushed every few days with little disturbance. In cases where gastric atony seems prominent and the patient's appetite is poor, bitters may be given with advantage before meals.

Intestinal lavage has been less frequently practised, and has not as yet yielded definite results. If, as has been claimed, the small intestines may be flushed out by high injections, there is reason to hope for some advantage from this method of treatment, and in the later stages of the disease it would be of additional service in supplying a certain amount of fluid to the empty vessels. The use of intestinal antiseptics, such as salol, naphthol, and carbolic acid, has been highly lauded, but the results are thus far uncertain. Free use of purgatives is distinctly less advisable than in chlorosis, excepting in the cases of parasitic pernicious anæmia. There is always the danger of deranging the stomach and of adding to the weakness of the patient. Enemata or suppositories will generally be sufficient for the purpose of securing action of the bowels, and beyond this we should not attempt to go.

Sooner or later in pernicious anæmia there comes a time when the deterioration of the blood, for which the excellent term *cachæmia* has been suggested, reaches such a grade that remedies seem altogether powerless. In this stage I have felt that the patient suffers quite as much, if not more, from the decreased quantity of the blood in circulation or from its inability to circulate freely. At this stage measures directed to assist the circulation are even more essential than arsenic. Of these measures not the least powerful is systematic massage. The interesting investigations of John K. Mitchell have shown very pointedly the effect of massage in putting larger masses of blood into circulation, and in pernicious anæmia less than in any other condition can the system spare any portion of the blood to rest idly in the tissues. A still more advanced case would call for injections of water or of blood. The safest and perhaps

the best method would be the hypodermic injection of normal salt solution in large quantities (two pints to two quarts). The intestinal flushings of which I spoke before might be of assistance here, but they could hardly prove as satisfactory as hypodermoclysis. The transfusion of blood itself has been practised by a number of investigators, and some, as Brakenridge, report remarkable improvement following the operations. It is doubtful, however, if blood-serum or blood has any great advantage over salt water, and certainly the danger of fibrin-ferment intoxication and other accidents would deter us. The administration of dried blood by the rectum possesses no special advantages.

In cases of pernicious anæmia in which improvement is seen to be taking place the treatment should be continued with great care. Under no circumstances should the hygienic and dietary regulations be relaxed or the use of arsenic discontinued. As in chlorosis relapses are frequently due to the neglect of the use of iron as soon as the patient's color is normal, so in pernicious anæmia I believe the intervals between recurrences could be materially lengthened, and perhaps permanent cure more frequently attained, by the unbroken administration of arsenic. During convalescence also I have found iron to be a valuable adjunct to arsenic. In the earlier stages of the disease, however, it is not only of no value, but often disagrees decidedly.

One word in conclusion. It seems to me that the best classification of the anæmias should assign to pernicious anæmia all cases in which the deterioration of the blood has reached the point I have indicated, whether a cause be found or not. This seems reasonable, because we have in all forms of severe anæmia presenting the features of pernicious anæmia the same evidences of great hæmolysis and defective hæmogenesis, and clinically the same tendency to further deterioration of the blood, whether the anæmia is secondary to gastrointestinal disease, to pregnancy and parturition, or apparently quite causeless. In the last group of cases no doubt similar causes will some day be found. According to this view, we look upon pernicious anæmia as a symptomatic condition, a high degree of *cachæmia*, which experience shows is a condition of great gravity, and which tends to grow worse. We are thus constrained to consider the diagnosis incomplete until the cause of this *cachæmia* is discovered, and the treatment requires attention to the underlying causes as much as to the blood itself.

## AN ADDRESS ON APPENDICITIS.

DELIVERED BEFORE THE SURGICAL SECTION OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

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IT has been my intention in preparing this paper merely to review some of those important points relating to the cause, course, and diagnosis of appendicitis, and more especially to its treatment, about which great differences of opinion still exist in the profession, and to make my own slight contribution towards the acquirement of a fulness and certainty of knowledge which will permit us at some future day to lay down certain broad general propositions accepted and endorsed by both surgeons and physicians. The divergence in the views at present advanced is extraordinary. If the disease were a rare one, met with by but a few consultants and requiring special technical skill for its investigation, the reason for this want of agreement would seem evident. That we do not know to-day whether purpura hemorrhagica is a disease of the blood or blood-vessels or of the nervous system is not strange. Few of us have seen fatal cases, still fewer have had an opportunity to make autopsies or blood examinations in such cases. But there is scarcely a practitioner of five years' standing in any part of the world who has not seen and treated inflammation of the vermiform appendix, and the sum total of professional experience is already so enormous that one would think it amply sufficient to resolve all doubts and to place the guiding principles of diagnosis and treatment upon a firm scientific basis.

On the contrary, it is scarcely an exaggeration to say that attentive perusal of the voluminous literature of the last ten years, beginning with the papers of Treves and of Fitz and ending with those now in process of publication, will demonstrate that there has been made scarcely one single statement as to the essential etiology, the pathognomonic symptoms, or the appropriate treatment which has not been flatly, often violently, contradicted.

This condition of affairs reflects but little credit on the profession, and certainly renders it proper that at short intervals we should pause, review and weigh the existing evidence, and strive for the common ground of agreement which is sure to be reached sooner or later.

I shall consider only the broader questions involved, selecting those about which there are unavoidable uncertainty and anxiety and

equally unavoidable differences of opinion at the bedside. I shall illustrate clinically only from my own experience.

The valuable papers of Fowler, Richardson, and Treves are still so recent and so exhaustive that my chief function must be to present for your criticism the conclusions at which I have myself arrived, and my reasons therefor.

As regards etiology, we may first consider (a) the *predisposing* causes. The explanation of the great frequency with which the appendix becomes the seat of inflammatory and destructive lesions as compared with the other portions of the digestive tract is undoubtedly to be found in its embryology and in its anatomical relations. There can be no question that those structures which remain to us as functionless vestiges of parts once useful in our prehistoric ancestors are possessed of low vitality and but feeble resistant powers. This is as true in the life of the race as in that of the individual. It doubtless explains in part the special susceptibility of the appendix to inflammation, as it does that of the uterus and the female breast to cancer during the post-sexual period of life.

In addition, its dependent position, its communication by an orifice, often more or less narrowed, with that portion of the intestine in which inspissation of intestinal contents first occurs, while at the same time it is removed from the direct fæcal current, all appear to be conditions so markedly predisposing to inflammatory attacks that we need look no further for a sufficient explanation of the extraordinary frequency of appendix trouble.

(b) *Exciting Causes*.—Putting aside the comparatively rare cases in which tubercular or other general disease localizes itself in the appendix, we have two chief classes of exciting agencies, clinical differentiation of which is to be earnestly aimed at: the *mechanical* and the *bacterial* or *infective*. The latter comes into play usually, perhaps almost constantly, as a sequel of the former, which may, I believe, exert its action alone from first to last in a given instance, and does so in many cases.

The following anatomical points must be remembered. The appendix is commonly found curved upon itself, because its mesentery, derived from the inferior layer of the mesentery of the ileum, is too short for it. In the foetal type of the cæcum and appendix the latter has a mesentery which runs to its tip, but in the majority of adults it ends about the centre of the appendix or at the junction of its middle and distal thirds. Along the free concave border of the mesentery runs a single vessel, a

branch of the ileo-colic, and from this branch the appendix, as a rule, derives almost its entire blood-supply. Another peritoneal fold runs from that part of the ileum most remote from its mesenteric attachment and is united with the mesentery of the appendix. It carries no blood-vessels. It is the remains of the *true* mesentery of the appendix (Treves). It is interesting to note the fact that in the different types of cæcum found in our species, those which involve a disproportionate growth of the cæcum show that it derives its peritoneal covering partly at the expense of the mesentery of the appendix, which becomes more and more scanty and more vertical in direction the larger the relative size of the cæcum.

We here have the factors which enter into the production of a large number of cases of appendicitis. Distention of the ileum with gas, or of the caput coli with gas or fæcal matter, will cause dragging on one or the other of these folds, already too scanty, increase the torsion of the appendix, interfere with the blood-supply through its single vessel, and, according to the degree of torsion, produce congestion and tumefaction, catarrhal inflammation, ulceration or gangrene, with the clinical symptoms that belong to each. The anatomical conditions are so simple and easily understood, and explain so completely various well-known types of the disease, that it seems to me we may assume them to be sufficient in many cases to account for all the symptoms.

The importance of the matter will be apparent if we remember that it has been asserted that all cases of appendicitis are infectious in their nature, and that from this assumption has followed the corollary that all cases should be operated on, as one attack would mean almost certainly another at some future time.

It seems probable, though hardly yet proved, that the *bacterial* cause of appendicitis is, as a rule, the bacterium coli commune, perhaps the most interesting micro-organism that is being studied at the present day. It is almost invariably to be found in the intestinal tract, and seems in the presence of sound mucous membrane to have little or no power for evil; but it is equally well demonstrated that if the epithelium is once destroyed it has both pathological and pyogenic properties.

Experiments have shown that even a moderate degree of constriction of the intestinal canal may be followed by the penetration of its wall by this bacterium, and also that its virulence is much increased by the presence of irritative conditions such as exist in advanced constipa-

tion or marked diarrhœa, even when produced experimentally by opium or by tartar emetic.

Other micro-organisms are exceptionally associated with acute appendicitis, but the most reliable observations seem to show that in eighty-two per cent. of infective cases this bacterium is the active agent (Tavel and Lanz).

A third class of causes which may be regarded as both predisposing and exciting must be made to include fæcal concretions and foreign bodies. The latter, once thought to be the chief factors in producing the disease, are now known to be of great rarity, occurring in only about four per cent. of operative cases (Matterstock, Fowler). Fæcal concretions are found in fifteen to twenty per cent. of such cases, and there is evidence to show that they may occasionally, by their presence, give rise to the lesion of the mucous coat which precedes infective processes; but they are so often absent in cases of all grades of severity, and so often present in autopsies on persons who have died from other diseases, that they should not be considered of primary importance.

The effect of age must be taken into account in summing up the etiological factors. It is certain that the two extremes of life are notably exempt, but the explanation of this fact is thus far purely theoretical.

It is asserted that in very early life the funnel-shaped appendix, apex downward, offers fewer opportunities for the formation and retention of masses of inspissated fæces, while in old age atrophy of the mucous membrane about the cæcal orifice of the tube again widens it; but we lack positive knowledge upon these points. The very existence of the fold of mucous membrane known as the valve of Gerlach is disputed, and in any event it is so imperfect mechanically as to be presumably of slight importance.

The disproportion between the sexes requires explanation. If we accept the usual description of the anatomy of the parts concerned, there seems to be no good reason why appendicitis should be found in males four or five times more frequently than in females; but if future observation confirm the assertion of Clado, that a fold of peritoneum passes from the right ovary to the meso-appendix—the appendiculo-ovarian ligament,—and if this fold carries a blood-vessel, an obvious, and it seems to me a sufficient, explanation has been found. It has been shown (Bryant) that the male appendix is four-tenths of an inch longer than that of the female; that its calibre is slightly larger; and, possibly as a result of the latter fact, that it

contains faecal concretions in a larger percentage of cases. But these circumstances do not seem to throw much light on the subject.

The manner in which constipation, or diarrhoea and digestive disturbances generally, favor the development of appendicitis is now evident. We have a vestigial structure of relatively poor vitality and low resistant power, so situated mechanically that its one source of blood-supply is greatly interfered with by twisting or dragging, and connected by short and scanty folds of serous membrane with portions of the digestive tract especially liable to changes of form and size which thus easily produce such torsion or tension. Furthermore, a micro-organism capable of great virulence if epithelial exfoliation occurs or if any area of lessened resistance exists is almost constantly present.

*Clinical Classification.*—Thus far, while there are minor differences of opinion, we are in the main on safe ground; but when we come to take the next step the lack of definite knowledge becomes painfully apparent, and we must, as it were, feel our way with caution.

How are we to recognize clinically the cases in which the mechanical element alone is the factor and the circulatory disturbance stops short of the production of necrotic lesions of epithelium, mucous membrane, or appendix wall?

If the views advanced as to etiology are sound, not only do such cases occur, but they probably outnumber the more serious forms of the disease, frequent as are the latter. Statistics support this view, as there is good reason to believe that from sixty per cent. to eighty per cent. of cases of appendicitis recover without operation, and in the majority of these an infectious element must almost certainly be absent. Nor do the facts bear out the assertion so often made recently, that such recoveries are merely apparent or temporary. Every medical man who has had a large practice for the past decade—*i.e.*, since the knowledge of this disease has become so wide-spread (thanks to the labors of Treves, Fitz, Bull, McBurney, Weir, and others)—could disprove this statement from his own experience, unless a period of freedom of from five to ten years is not sufficient to establish permanency of cure. The all-important question to be settled at the present day is how to recognize such cases at the bedside.

If we review the early symptoms of a typical case of so-called mild or catarrhal appendicitis, and assign each to its anatomical or pathological cause, it is discouraging to find that thus far we have at this stage practically no means

of distinguishing the cases which are going to stop short of grave organic lesion from those which, unless cut short by surgery, are predestined to almost certain fatality; and yet the review of such symptoms cannot be regarded as valueless, as only in this way, as time goes on, can we hope to reach diagnostic accuracy.

Let us suppose that we have a case in which constipation (which has been obviously or unsuspectedly present in ninety per cent. of my cases) or diarrhoea, or at least some digestive derangement, has caused intestinal distention with faecal matter or with gas, or irregular and excessive peristalsis in the ileo-caecal region. The meso-appendix is dragged upon, the torsion of the appendix increased, the return of blood interfered with; the arterial supply, more difficult to disturb than the venous current, is but little affected. If we could see such an appendix we would undoubtedly find swelling and congestion, hypersecretion, nerve irritation. It seems to me theoretically unreasonable to suppose that in every such case there is necrosis even of epithelium or infection even of low grade. It is probable, however, that there is, even in the mildest cases, an exudate under pressure into the submucous and muscular coats of the appendix wall and a slight adhesive peritonitis of very moderate extent. The post-mortem findings, which show that in one person out of every three there has been some pathological condition present in the appendix, are so out of proportion to the clinical percentage of frequency, large as that is, that it seems evident that some such minor attacks *must* take place, and often with phenomena so slight that they scarcely attract attention.

The usual symptoms of such a case as we are considering, with their explanation, are: *pain*, at first general and diffused over the abdomen, because the superior mesenteric plexus of the sympathetic, which supplies the appendix, also largely supplies the intestines, and because irritative nerve pain is apt to be referred to the peripheral extremities of nerves; next and within a very short time felt in the umbilical region, because as such pain increases in intensity it is often referred to the nearest nerve centre, and the great sympathetic ganglia of the abdomen are situated in that region.

The pain at this time is often colicky in nature, and a discussion has arisen as to whether or not the circular muscular fibres in the appendix are of sufficient strength to cause it. The question will probably be settled in the affirmative, as the appendix has actually been observed in alternate spasm and relaxation when exposed in a wound (Morris); but it

seems to me unimportant, as appendix irritation may result in colicky spasm of neighboring portions of either small or large intestine.

After a few hours the pain is felt in the right iliac fossa, because it has then become a neuritis of sufficient grade to cause *tenderness on pressure*. It is a *localized* tenderness in all the varieties of appendicitis, because while the appendix itself is movable, it always arises from the same part of the cæcum, and the mobility of the latter is much more restricted. The point of pain on pressure known as McBurney's point indicates, therefore, with moderate accuracy the base, not the tip, of the appendix, and is rarely absent even in gangrenous cases, because that portion of the appendix is usually the last to be affected by interference with the blood-supply.

*Vomiting* commonly follows, has little relation to gastric conditions, and is ordinarily reflex and due to reversed peristalsis, as the ejecta show a degree of digestive change corresponding to the time which has elapsed since the last meal.

*Moderate fever* (99.5° to 101° F.) and slightly *increased pulse-rate* (90 to 110) are usually present, and are doubtless due to the same sort of absorption of intestinal products as gives rise to the same symptoms in constipation or in true bilious colic, for which cases of this kind are sometimes mistaken.

There is slight *rigidity of the right rectus muscle*, and later of the other abdominal muscles over the right iliac fossa, often, but perhaps not necessarily, due to peritonitis, and in any event arising from the fact that those muscles receive their nerve-supply from the seven lower intercostals, while the superior mesenteric plexus gets its contribution from the spinal system through the splanchnics, derived from the same seven intercostals.

This group of symptoms includes all that are of any value in this type of appendix trouble. It has been asserted (Rushmore, Osler, and others) that to speak of the first day that the patient complains of pain as the first day of the disease is fallacious, and it is said that what we recognize in appendicitis is peritonitis, which has been preceded by ulceration of the mucous membrane and a perforation of the appendix itself, and that therefore the first day of pain is rather the last day than the first day of the disease.

Now, if this were demonstrably true it would, I think, oblige us to accept the rule laid down by some surgeons, that the diagnosis of appendicitis brings with it the obligation to operate. But it is demonstrably untrue. Not

only *does not* every case with the above symptoms have precedent ulceration, but there have now been enough early operations and removal of appendices at this stage to enable us to say positively that, apart from the conditions already described,—swelling, congestion, and associated vascular changes, and nerve irritation,—there are often no grave lesions of either the mucosa, the parietes of the appendix, or of its peritoneal covering.

I have dwelt upon the symptoms belonging to this class of cases because it is just here that the field of the physician and that of the surgeon is, or should be, essentially a common one. The patient naturally and properly sends for his usual medical adviser. It would, I think, be well if the latter asked for surgical help earlier and oftener than he now does. The problem with which he is confronted is as yet unsolved. While the explanation already given of the etiology and symptoms in these cases shows (1st) that they may depend upon mechanical causes, and are not necessarily infectious, and (2d) that there is no phenomenon associated with them which of itself indicates either a solution of continuity of the mucosa, infection of the appendix wall, or peritonitis, unfortunately, it must also be said that there is none which *excludes* the graver conditions. Fitz remarked eight years ago that while a simple catarrhal appendicitis exists anatomically, it is doubtful whether its clinical appreciation is possible. If he meant that its clinical differentiation from more serious conditions could not accurately be made, his remark is still true. Colicky pain, localized tenderness, slight abdominal rigidity, vomiting, moderate fever, may be the only symptoms of a case which is going on to a rapid termination by gangrene, perforation, and septic peritonitis. It must, therefore, be decided whether, taking a large number of such cases, medical treatment or operation offers the best chance for recovery; and in reaching this decision it is impossible to ignore the oft-repeated assertion already alluded to, that all cases are essentially infectious, and that recovery from any particular attack is, as a rule, only apparent and temporary, not real or permanent.

This exceedingly important matter will sooner or later be settled statistically. At present the facts seem to be as follows: perhaps eighty per cent. of cases of this type recover under medical treatment. I have looked into the published figures as to this question with great care, and have gone back in my own case-books to the days when I saw a not inconsiderable number of medical cases annually. I believe that, on



the whole, they may be taken as approximately correct. We are, however, in special need of reliable *medical* statistics as to this point. Of the remaining twenty per cent., at least one-half can be saved by operation during the condition of localized abscess, which would form in probably that proportion of cases. This assertion is based upon my own experience and upon the more extensive figures of Richardson, Fowler, and others. Of the remaining ten, in which no protective adhesions would form, a certain indeterminate proportion would recover after operation done before septic peritonitis and intestinal paresis had occurred. This would leave a death-rate of, say, five to eight per cent.

If, on the other hand, every case were operated on as soon as seen, would this death-rate be increased or diminished? Here a similar need for surgical statistics exists, but is now being rapidly met. During the period when any particular operation is fighting for recognition, and is often performed in the face of much professional opposition, the history of surgery shows that, not unnaturally, the fatal cases do not find their way into print. This period, so far as appendicitis is concerned, has now about ended, but only very recently. No careful operator to-day hesitates to give his figures and results when he feels that they have become numerous enough to be of value, but they are not yet available in sufficiently large numbers in this particular class of cases. There is probably no one present who is not familiar with some unpublished cases of post-operative deaths, and although it is doubtless true that we all know of many more cases in which death has occurred for lack of operation, that fact does not affect the truth of my statement that we do not know the mortality of such an operation under those circumstances. It has been a favorite form of expression to speak of the death-rate as "practically *nil*," and to compare it with that of celiotomy for exploratory purposes, as in cases of tumors, etc.; but the argument by comparison is fallacious. Certain facts resting on abundant evidence, both clinical and experimental, have been ignored. We would often operate in the presence of a peritoneal infection the exact limits of which would be indeterminate. This must include not only the actual presence of micro-organisms, but the presence of their secondary products, which are now believed occasionally to give rise to so-called "chemical peritonitis." Operation, however skilfully conducted, means of necessity a certain amount of traumatism to the

peritoneum and an equivalent diminution of its local resistant power. Most surgeons of experience will agree with Treves, who in his recent admirable Lettsomian Lectures says, "There is no doubt that the nervous disturbance which attends any abdominal operation leads to some degree of intestinal paralysis. This paralysis, attended as it is by vaso-motor changes in the bowel-wall, is favorable to the absorption of septic matters from the intestine." It may be slight and may disappear spontaneously; but if it persists, it appears to permit of filtration through the intestinal wall of bacteria or their products. These latter are readily taken up by the peritoneum, and a septicæmia begins. It should also be remembered that Terillon has shown that the effect of irritation of the parietal peritoneum, which is chiefly disturbed in ordinary exploratory operations, is comparatively feeble, while it is violent and intense when that covering the intestines is involved (Treves).

Therefore, while both my experience and my observation lead me to believe that, in good hands, these very early operations will have an extremely low mortality, perhaps lower than that of the disease treated medically, I do *not* believe that it will be "practically *nil*," and, at any rate, I do not think it fair to our medical colleagues that we should take that position before we are able to demonstrate it.

As to the diagnosis of the class of cases we have just been considering, it is to be made chiefly from stercoral typhlitis, a condition which has been so overshadowed during the advance of our knowledge in regard to appendiceal disease that we are in danger of acting as if it were non-existent. In some elaborate reviews of the diagnosis of appendicitis it is hardly mentioned, and yet a very moderate clinical experience ought to convince any careful observer that it is not infrequent. It has many features in common with appendicitis, and it is quite possible, as has been asserted, that to some degree this is present in most cases of stercoral typhlitis, but the independent existence of the latter condition has been shown unquestionably both at autopsies and at operations, where severe forms of typhlitis and perityphlitis have been found to be dependent on stercoral ulcers of the cæcum, and the appendices were normal. It is unquestionably true that in the vast majority of cases of severe inflammation and suppuration in the right iliac fossa the appendix is at fault, but it should not be forgotten that in many of them the original trouble is a constipation, associated with distention of the cæcum by fæcal masses often

containing undigested food, and exciting both mechanical and chemical irritation. The relation of the mild attacks of appendicitis to digestive derangement has been quite unmistakable, in my experience, and it is not very uncommon to find in relapsing appendicitis that one particular article of food is the especial exciting cause of an attack. (See Case XII., page 399.)

Now, if in so many cases fecal distention of the cæcum is the starting-point of appendicitis, it is reasonable to believe that in some of them the trouble does not pass beyond the cæcum, and it is important to recognize these cases, because the prognosis is so much more favorable and operative measures need not, as a rule, be thought of.

They have occurred with me chiefly at the times of life when appendicitis is less common, and more especially in children. They can be recognized with certainty only by the initial presence of a doughy sausage-shaped tumor in the cæcal region associated with the usual symptoms of appendicitis in a modified form. The localized tenderness is not so great; the fever is very moderate; vomiting is rarely a prominent symptom; constipation is almost invariable, though occasionally a spurious diarrhoea (analogous to the "incontinence of retention" in bladder cases) may make its appearance.

The discovery of a tumor at the very beginning of an attack of apparent appendicitis of obviously mild type, would, I think, justify the diagnosis of stercoral typhlitis, but I know no other way in which the diagnosis can be made, and in the absence of that symptom it would be safer to consider doubtful conditions as almost certainly indicating appendicitis.

CASE I.\*—A little girl, whom I saw in consultation with Drs. Lewis D. Harlow and Louis Starr, had an attack of vomiting followed by umbilical pain and almost immediately by right iliac tenderness. When I first saw her, about *eight hours after the beginning of the illness, a distinct mass could be felt in the cæcal region*; tenderness at the edge of the right rectus in the omphalo-spinous line was marked; she lay on her back with the knees drawn up; her temperature was 101° F., her pulse 110. Her mother stated positively that the bowels had moved regularly and that she had never known her to be constipated. Salines, which had already been given, were continued. Hot fomenta-

tions were applied to the abdomen. The diet was reduced to teaspoonful doses of peptonized milk at hourly intervals.

At the end of twenty-four hours there was a little aggravation of all the symptoms; at the end of forty-eight hours there was slight tympany; at the end of sixty hours, when we were considering the advisability of operation, there was an enormous stool, followed by two others in rapid succession and by a complete disappearance of all the symptoms.

It will be convenient now to consider the non-operative treatment of these mild "catarrhal" cases before passing on to those of the next grade.

Certain indications are so clear that there is practically no difference of opinion about them.

Ordinary clinical experience with other forms of enteritis demonstrates the value of *absolute rest* in bed and on the back. The frequent inability of the stomach to retain food, the certain inability of a portion of the intestinal tract to take care of the residue, even if it reaches that point, and the absolute need for the avoidance of all sources of local irritation point so clearly to a diet reduced to the lowest possible terms that it is always a matter of surprise and disappointment to me to find patients, even in the early and acute stages of this disorder, being fed regularly every two, three, or four hours with portions of milk and lime-water, or often with more harmful foods, as though they were in the last stage of some exhausting disease. No one, beginning in comparative health, ever starved to death in three or four days. There is no doubt that many of these patients have been fed to death. *Starvation* in its therapeutic sense is one of the most important elements of treatment, and the nearer the patient comes to taking nothing except an occasional sip of water the safer he is.

The *local* use of *heat*, drawing the blood to the superficial veins of the abdomen, of *cold*, by means of ice kept on long enough to bring about local anæmia extending to the parietal peritoneum or deeper, or the actual abstraction of blood by *leeches*, seem to have about equal claims to employment. Personally, I prefer either the heat or the bloodletting. I strongly object to blisters, iodine, and the use of smeary ointments as rendering the skin more or less unsuitable for a satisfactory operation later, if one be required.

The question about which there is the widest apparent divergence of opinion concerns the respective merits of the use of salines and the use of opium. The very briefest review of cur-

\* Wherever possible I have italicized the special point or points which these cases are intended to illustrate.

rent literature will show that the writers on this subject have practically ranged themselves in two camps; often, however, expressing most decided opinions without specifying at all the class or classes of cases to which they refer. Avoiding the extremists and taking the calmest and most carefully considered articles as examples, we find Osler saying, "If there is much pain, opium should be given hypodermically or by the mouth. . . . I would protest most earnestly against the indiscriminate use of saline purges." Pepper says that "so far as medical treatment goes, the great stand-by is opium in full doses;" and adds, "that the same reasons that indicate opium should lead to the avoidance of salines." On the other hand, Treves says, "Give as little opium as possible;" and adds that he is quite convinced of the value of aperients in the early stages of appendix troubles and sometimes throughout the attack; while Fowler, after seeing one hundred and sixty cases, says that beyond the careful use of salines in the earliest stages of the mild cases the less medical treatment the better; but adds, "above all things the use of opium must be avoided as much as possible."

These four quotations will suffice to represent the opposing views.

My present opinions, which have not been reached without some thought and much hesitation, but which seem to me more and more satisfactory as my experience widens, are based on the following considerations:

I have never happened to see one of these extremely mild cases in which there was diarrhoea, nor one in which the bowels moved easily after enemata or aperients, run on into the graver type of case. I will doubtless meet with this some time, as others have done so, but thus far there has been no exception to the rule in my personal experience. I read that of twenty-two cases of peritonitis from appendix troubles occurring at the London Hospital there were nine cases of constipation, with four deaths, and thirteen cases in which the bowels were loose or were easily moved, with two deaths. I find upon analyzing Richardson's tables that of those acute cases which recovered without operation, constipation is mentioned as a prominent early symptom in four, diarrhoea in ten, while in those cases which died without operation there was early constipation in three and diarrhoea in one. The force of these figures is much increased if we remember that where neither diarrhoea nor constipation was mentioned, it is fair to presume that the bowels moved regularly. There was thus eight per cent. of constipation among the cases that

recovered, and twenty-eight per cent. among those that died. In addition, every surgeon who has had any abdominal work knows how essential it is to have the intestinal tract thoroughly evacuated before operation. It is in this way and by the prompt administration of salines according to Tait's plan on the first appearance of symptoms of "pseudo-ileus" that general peritonitis is often avoided, not cured, as is incorrectly stated. As any case of appendicitis may become an operative case, it is of the highest importance that in the early stages whatever remains of peristalsis should be encouraged and not destroyed by the use of opium. Furthermore, it has been shown experimentally that after an injection of a culture of the virulent colon bacillus into the peritoneum of animals, if the dose is not too large, the animal recovers after an illness of which diarrhoea is a symptom (Treves).

For these various reasons my rule in practice is: In all ordinary mild cases give salines until free purgation is assured, and then continue the action more gently by the use of divided doses of calomel, which by its antiseptic properties has a distinct value, and through its effect on the portal circulation aids also in the depletion of the ileo-colic vein and its tributaries.

Spontaneous severe colicky pain, altogether distinct from pressure tenderness, is the only indication I recognize for the use of opium, and I give it then in minute doses combined with enough calomel to overcome its constipating tendency.

I am at present satisfied that this treatment is practically sound, and I am certainly convinced that many patients to whom opium is given early and freely die partly because the imperative need for operation is thereby disguised and the favorable opportunity lost, and partly because the free evacuation of the bowels, so necessary for success, is interfered with.

I may say here, before leaving the subject of the medicinal treatment at this early stage, that in my judgment not enough attention has been paid by either physicians or surgeons to what might be called the antiseptic treatment of appendicitis. It is reasonable to suppose on *a priori* grounds that in a disease the most serious varieties of which are produced by infection with micro-organisms whose habitat is the digestive tract, intestinal antisepsis would be of distinct value. And furthermore, I would say that in all forms of sepsis present or threatened there is good reason for believing that the systematic administration of soluble and powerful antiseptics is of far more importance than

is commonly supposed. A record which I will shortly publish of observations in this direction made on cases of carbuncle and of chronic furunculosis will, I think, be convincing of the possibility of powerfully influencing through the blood the susceptibility of the entire organism to bacterial infection and growth. But I merely mention the matter to-night to bring it to the attention of the medical men present, and to ask for their views and experience in this direction.

If the medicinal and dietetic treatment has been successful the symptoms gradually disappear, the local tenderness often being the last to go. Scrupulous continuance of rest, restricted diet, and mild laxatives should be continued for from one to two weeks.

If the symptoms are worse instead of better at the end of forty-eight hours, or earlier than that if there is *severe, sharp* pain, increased tenderness and rigidity of the abdomen, and beginning tympany, either local or general, I think there can be no doubt that surgical interference offers by far the best hopes of recovery. In the majority of cases these phenomena then indicate a perforation of the appendix wall, possibly not macroscopic, but permitting the filtration through it of bacteria and their products.

So far as diagnosis goes there is practically no condition for which such a case can be mistaken. The previous history with the symptoms above described place it beyond all peradventure. Occasionally there may be an extraordinary case in which coexistent disease of another kind would cause doubt or confusion, but I am occupied this evening not with medical or surgical curiosities, but with every-day cases, and these at this stage can scarcely be misunderstood.

We are on equally assured pathological ground. In thirteen such cases examined by Van Cott there were evidences of obstructive conditions found in the vessels of the mesentery of the appendix, either thrombus or endovasculitis, while in the appendix wall there were round-cell infiltration, necrotic areas, and purulent foci. Interstitial neuritis was also present (Fowler).

It is of course not impossible for resolution to take place in these cases. Not every one of them goes on to gangrene in mass and to infection of the general cavity. Even if resolution does not occur, a protective inflammation may wall off the appendix, and does so in a large proportion of cases.

But there is absolutely no way of recognizing with any reasonable certainty which of

these three events will follow: resolution and recovery; localized abscess, with ninety to ninety-five per cent. of chances in the patient's favor; or general peritonitis, with almost sure death if it is once well established.

If operation is done at this stage it is usually easy. An incision two or three inches in length is better than a smaller one, and is most advantageously placed if it is oblique with its centre a little outside of McBurney's point. When the belly is opened there will usually be found a moderate excess of peritoneal fluid, clear or only slightly turbid and without odor, a circumscribed peritonitis, weak adhesions between the cæcum and the parietal peritoneum and adjacent intestines, and a tense, swollen appendix, either angulated and twisted or erect and prominent, according to the length of its mesentery. It can be removed most safely by making a circular incision through its peritoneal coat, three-fourths of an inch from the base, reflecting it like a cuff, ligating the mucous coat with a circular ligature, touching its surface with a drop or two of pure carbolic acid, replacing the peritoneal coat, and stitching with a Lembert suture. When the peritoneum has become thickened and brittle, almost equally good results can be obtained and more expeditiously by throwing a ligature around the whole appendix one-quarter to one-half inch from the cæcum, removing the organ, and cauterizing the stump with carbolic acid. The appendix will show the microscopic changes I have described. It would be absurd before this audience to waste time with talk of the importance of asepsis or with remarks about the details of technique.

As a rule, the wound may be closed without drainage, and, if closed properly, the risk of ventral hernia is a very small one. The operation will certainly have a small mortality, but for reasons already given it will be a larger one than if it were a simple exploratory operation.

While, however, I believe more patients would be saved by operation at this time than by any temporizing measures, I find that that opinion when expressed at the bedside is not always coincided in by the medical attendant or the patient.

I may say, therefore, that experience has taught me to await events with more equanimity: 1. If the bowels are loose. 2. If the pain is dull and throbbing (connective-tissue pain, —Bryant), and not sharp and lancinating (serous-tissue pain); the former I refer to a tense appendix, with infiltration of the wall, but without gross perforation or intense or widespread peritonitis. 3. If the spot of greatest

tenderness on pressure by a finger-tip is not precisely at McBurney's point. This is an empirical rule; but I have noticed in a number of cases in which there was delay at this stage, and which finally did well without operation, that the point of greatest tenderness so anxiously investigated at each visit was more or less remote from the usual region. If this proves to be an observation of any value, it will be for the following reasons: the body and tip of the appendix are less vascular, and less richly supplied with nerves than the base; they are, therefore, more commonly the seat of the earliest degenerative changes. If those changes are very intense, and particularly if they go on to gangrene, sensibility in the body and tip is quickly lost, and pain at the more fixed portion of the appendix, the base, becomes the prominent symptom, and is recognized at the usual point. If the changes are of a milder type, such as permits of recovery by resolution, sensibility of the tip will be retained, and will be felt at various points on the abdominal surface, varying with the position of the appendix.

4. If vomiting is not marked. It is not usually a prominent symptom of this stage of appendicitis in cases which lead to recovery. It will almost always be found present in an inverse relation to the looseness of the bowels. Its absence is a very favorable circumstance, and always, and I believe justly, influences my prognosis. 5. And, finally, I am less anxious during this period of delay if, without marked change in the general condition, increased resistance, slight dulness, and the presence of a mass recognizable by palpation indicate that a localized abscess is forming, shut off by adhesions from the general peritoneal cavity.

CASE II.—A young man, whom I saw in consultation with Drs. John Musser and William Pepper, had the usual symptoms of a moderate attack of appendicitis for three days. At the end of that time the conditions present were: distinct rigidity of the abdominal muscles over the right iliac fossa; slight tympanitic distention of the same region; temperature,  $101.5^{\circ}$  F.; pulse, 110; *marked tenderness at a point just above Poupart's ligament at the junction of the middle and inner thirds.* He had been continuously on salines. His stomach was retentive, but there had been no bowel movement for two days. He was getting no food. I was strongly inclined to operate, but delay for twelve hours was decided upon, and at the end of that time there was such marked amelioration of all the symptoms that operation was not further considered.

We may pass in this condition of uncertainty into the period extending from the third to the fifth day with very little alteration of the symptoms, but usually during this time one of the three events already mentioned will occur. If the bowels continue to act spontaneously or with mild laxatives; if the tympany, which may be quite marked, begins to decrease; if the fever lessens, and especially if tenderness remains well localized and tends to subside, the prognosis is, on the whole, favorable, although the patient is unquestionably in grave danger during every minute of this time. If no amelioration of these symptoms occurs, although no new ones develop, the case at that period, from the third to the sixth day, becomes one of the most anxious and trying with which either physician or surgeon can be confronted. It is the time at which, as Richardson has tersely put it, we may feel that it is "too late for the early operation and too early for a safe late operation." It is probable that adhesions have formed, offering a certain degree of protection against general infection, but experience shows that in many cases they cannot be depended upon, and we may find at any visit that the tenderness and tympany have increased in intensity and become more widely diffused, that vomiting is more frequent and uncontrollable, that the fever has risen to  $104^{\circ}$  or  $105^{\circ}$  F., or, more ominous still, has disappeared, leaving the temperature subnormal; in other words, that the general peritoneum has become involved. If, with the fear of this occurrence before us, we proceed in such a case on the fourth or fifth day to removal of the appendix, we do so with the knowledge that there is much risk of breaking up the recent and delicate adhesions which have thus far been the patient's safeguard, and we know that it is not always possible under these circumstances, however thorough and minute our precautions, to prevent a spread of the infection. Here, again, I am not in sympathy with those surgeons who speak in an airy and confident way of the overwhelming advantages of operation, but am once more of the opinion of Richardson, whose excellent work and writings on appendix disease entitle him to frequent quotation, and who says that "there is no more difficult operation in surgery than that of removing an appendix at this stage without infecting the general peritoneal cavity." The question certainly is one of the most important connected with this discussion.

I have tried earnestly to find some light upon it, but my own experience and the recorded testimony of the profession have alike failed to

help me. With absolutely identical symptoms on which to base a prognosis at this stage, any two cases may go on, one to recovery, the other to death, and the same remark applies to the results of operation. On the whole, however, this very uncertainty tends to favor operation, in spite of its undoubted dangers.

We are now dealing with a case of circumscribed peritonitis threatening to become general. The infection which is giving rise to it is a progressive one. Ziegler and others have shown that the effect of injecting a culture of the colon bacillus into the peritoneum of animals varies, other things being equal, with the dose. In the mildest cases an illness in which, as has already been stated, diarrhoea is a symptom is followed by recovery. In another grade a localized purulent peritonitis is produced, running a slow course. If the dose is larger a fatal diffuse fibro-purulent peritonitis follows, and if still larger death may occur from acute sepsis before there has been time for any of the phenomena of peritonitis to develop. The peritoneum has thus undoubted ability to take care of certain quantities of bacterial poison, but succumbs to larger ones, and for this and other reasons it cannot be questioned that if choice had to lie between infection during and because of an operation on the third or fourth or fifth day, and, on the other hand, an operation to which we are forced on account of spontaneous infection at some later period, the former is by far to be preferred. Many recoveries do occur after operation at the beginning of a general peritonitis, but the difficulties and dangers of the case are both so greatly increased at that time that if its probable occurrence could be predicted with any certainty, operation in anticipation of it would with equal certainty be indicated.

Statistics as yet help us but little, because we do not know even approximately what proportion of patients in whom the policy of delay is adopted survive or perish.

The reported operative cases are of little use, as many of the operations were undertaken in the presence of septic peritonitis. Fowler, for example, in forty-nine operations, on the fourth, fifth, sixth, and seventh days, lost twenty-one of his patients; but eighteen of them had this condition pre-existing, and the length of time it had existed is not stated. On the other hand, I find from Richardson's figures that twenty-eight operations followed by death were done at a time averaging five and a half days after the first symptoms, while in fifty-eight operations followed by recovery

the average pre-operative time was nine and one-half days.

This, however, may indicate merely what might be called the survival of the fittest, and can certainly not be used as an argument in favor of delay.

It is obvious that until we have figures, especially from our medical colleagues, which will enable us to contrast the results of expectancy with, first, the mortality of operations in the presence of distinct, but presumably localized, peritonitis and before general infection, and, next, the mortality at the beginning of general infection, we cannot settle the matter statistically.

The diagnosis between appendicitis and other distinct diseases during this period presents but few difficulties. Many of the long lists of differential diagnoses already published are useless to the practitioner of ordinary intelligence, and serve only to add to the flood of pointless compilations with which we are overwhelmed.

It is the diagnosis between the existing conditions in and about the appendix in any given case, and their probable outcome, which is of the most vital interest, and on which no amount of time would be wasted if it advanced us ever so little in our bedside knowledge of these cases at this important stage. Much weight has been attached to the presence or absence of pus, and to the great desirability of finding some reliable test for its presence. Thus far all such tests are purely theoretical, and none that have had a fair trial have given satisfactory results. It is certain that at present no safe prediction as to this point can be based on the condition of the blood or the condition of the urine. The leucocytosis described by Richardson as being present in perforation has no apparent relation to suppuration, but it requires and deserves further investigation.

But, after all, while information as to the presence or absence of pus is much to be desired, what we need far more, and what would be of far greater use to us, is information as to what symptoms indicate a persistent circumscription of the inflammatory action, whether it be suppurative or otherwise, and what symptoms point to an extension to the general peritoneum. In the presence of the latter we would operate altogether irrespective of the existence or non-existence of suppuration. Treves has shown that in the larger proportion of cases of fatal peritonitis the leading symptoms are those of poisoning, and not of inflammation. Extension of the latter to the general peritoneum means that a large part of the

enormous area of that membrane (probably as great as that represented by the whole cutaneous surface) takes part in the absorption of the products of the bacterial infection.

It should not be forgotten that the cases in which suppuration is most pronounced are among the most favorable examples of peritonitis, and that the most hopeless cases are often among those that show the least inflammatory changes. For example, seventy out of one hundred cases of peritonitis at the London Hospital died. In thirteen of these the cause of the peritonitis was either cancer or tubercle or was never found. That leaves fifty-seven examples of death from peritonitis. Now, in only fifteen of these was the exudation purulent; in eleven it was described as sero-purulent; and in the remaining thirty-one cases there was not even a suggestion of pus (Treves). It is evident that we need far more than a test for pus to aid us in these cases, and that the talk which is so common about operating as soon as there is a recognizable sign of pus, while it is correct so far as it goes, is superficial, and fails to take into account problems which are both more serious and more recondite.

I shall recur to this subject for a moment later; but as to this aspect of it, must admit that at present we have no safe rule to guide us as to the greater or lesser likelihood of generalization in any particular case of appendicitis in the stage of circumscribed peritonitis. As we know clinically that localized varieties of peritonitis and circumscribed exudations are very rare in the area occupied by the small intestine, and as we know both clinically and experimentally that the peritonitis which involves its covering is of the most violent and intense variety, it might perhaps be safe to say that where the area of tenderness is small and distinctly confined to the cæcal and pericæcal area the prognosis is more favorable than when it extends beyond that region, and the latter occurrence might thus be regarded as pointing in the direction of generalization, and, therefore, of operation; but I have no reliable observations to confirm this view, which may be unsound as a practical guide. Of the phenomena which mark the actual onset of diffused peritonitis, perhaps the gradual increase of tympany and tenderness and persistent vomiting are the most significant.

If operation is done in a doubtful case at this time, it will differ from the procedure already described in the necessity for thorough cleansing of the peritoneal cavity, if it is found to be infected, and in the employment of drainage. It differs also in the great care which must be

taken, if a localized cavity containing purulent or sero-purulent fluid is found, to avoid making a communication with the general cavity of the belly. Large numbers of cases show now beyond all doubt that it is infinitely better to leave the appendix than to make a prolonged search for it, or to employ much manipulation in freeing it from adhesions preparatory to removing it. The later the time of operation and the stronger and firmer the abscess wall the safer the operative procedure becomes; but in every case and at every period, if there is a circumscribed abscess, it is poor surgery to insist upon finding and taking away the appendix in the face of obstacles.

CASE III.—I saw some years ago, in consultation with Dr. Newberry, of Fort Washington, a young man with all the phenomena of appendicular abscess. An opening over the most prominent part of the fluctuating swelling gave exit to a pint or more of fetid pus. The appendix was gangrenous quite down to the base. *but was partly embedded in the inner wall of the abscess cavity. I freed it with some difficulty* and as gently as possible, ligatured it on a level with the cæcum, and strengthened the intensely inflamed area at that point with an omental flap. I drained with a glass tube. The operation was done rapidly, there was no shock, and the patient had not a bad symptom for twenty-four hours. Then he developed general septic peritonitis and died within a day or two.

This case operated on very early in the period of appendix surgery will always be a source of regret to me. I did what was then considered the ideal operation in the face of great difficulties, but lost the patient. From that day to this I have never lost a case in which there was at the time I operated a well-localized abscess. I have often removed the appendix when it was easily found, but I have oftener left it without more of a search for it than could be made in two or three minutes.

CASE IV.—Later, I saw, in consultation with Professor William Osler, of Johns Hopkins, and Dr. Kerr, of Washington, a lady who was suffering with an attack of appendicitis of a chronic type. She had been ill for more than two weeks. There was a thick-walled tumor in the right iliac fossa. An incision through thickened and oedematous tissues gave vent to a large quantity of fetid pus. Digital exploration with the finger showed dense adhesions in every direction. *No further search for the appendix was made.* A drainage-tube and iodoform gauze were inserted and the angles of the

wound closed. Recovery was uninterrupted. A sinus which persisted for a time finally healed.

CASE V.—I operated, in consultation with Drs. Mackenzie and Sheppard, of Trenton, on Mr. P., a brewer, exceedingly stout and in an apparently profoundly septic condition. The abscess cavity which I opened was so immense that it seemed almost certain that it was practically the general cavity of the peritoneum. No free coils of intestine could be felt, however, even with the whole hand introduced and swept cautiously around the walls of the cavity, which reached over beyond the middle line. A loose faecal concretion was found. No search was made for the appendix. Irrigation, iodoform, glass drainage, and iodoform packing were used. An unfavorable prognosis was given, but the patient made a rapid and uneventful recovery.

I could record many such cases, but there is not enough variety about them to make their details of interest. They have recovered without exception.

The soundness of this procedure is abundantly certified to. In a series of cases of perforative peritonitis reported by Kaiser, of six examples in which the exact point of perforation was never found, five recovered. Treves says, "The wisdom of doing no more than is necessary, or as little as is obvious, is well illustrated in these cases. A clump of adherent intestines will often cover and protect a perforation, and the ubiquitous lymph will many times close such an opening with more speed and security than are provided by any system of suturing. As the surgeon, therefore, reaches what appears to be the starting-point of the peritonitis, he must proceed with the utmost caution, and be not only prepared, but rather inclined to leave the actual *fons et origo mali* undemonstrated. The main purpose of the operation is to allow a noxious exudation to escape and, if possible, to free the peritoneum of the cause of its trouble. In the class of cases now under discussion, a perforation will be very often the starting-point of the peritonitis; the lapse of time and the plastic character of the inflammation afford evidence that the perforation is for the time being closed. If the operator can rid the serous cavity of the effects of the perforation, he may very often leave the breach itself to be dealt with by natural means." In seventeen cases in which Fowler did not remove the appendix, and which recovered, there was recurrence in only two within the next two years. The remainder had gone

for variable periods, three of them for between three and four years, without any symptoms. I have now had fifteen such cases myself, and in none of them have I heard of any subsequent trouble other than the occasional occurrence of a small faecal fistula, which sometimes relapsed once or twice, but has thus far finally closed spontaneously and permanently in every instance.

Usually at the operation the caecum is the first structure recognizable after the abdominal wall is incised, and the anterior muscular band leading to the base of the appendix is occasionally a useful guide; but generally the increased resistance felt by the finger at a particular point, followed by inspection with the wound gently held open by retractors, will reveal the whereabouts of the organ. If it is found in this way and can easily be isolated by the finger and a thread thrown around its base, its removal is clearly indicated. If, however, as in a case operated on a few days ago, it is deeply embedded in the abscess wall and its tip only is visible, it is far better to leave it undisturbed.

CASE VI.—The patient was referred to me at the German Hospital by Professor James C. Wilson. She was a woman of fifty years of age, but had not had her menopause. She was of low intelligence, and no satisfactory history could be obtained. It was certain, however, that after her admission to the hospital she complained bitterly of pain in the left iliac region, and only later of pain and tenderness on the right side. Vaginal examination revealed a firm, resistant, tender mass on the left side and nothing abnormal on the right side. Her temperature was 101° to 103° F.; her pulse 110. There was dulness over the right flank. There was general tympany; some general tenderness, more marked, however, on the right side and at McBurney's point. Borborygmi could be heard by abdominal auscultation. The bowels moved freely under salines, after which there was a drop of two degrees in temperature and some improvement as to her feelings, but the local phenomena remained unchanged. An incision gave exit to perhaps twenty-four ounces of horribly fetid pus, which had been under great pressure. Inspection showed the distal extremity of the appendix projecting into the cavity from among a mass of intestinal coils covered with lymph and firmly matted together. No effort was made to remove it. The patient has done well.

The same reasons that forbid interference under these circumstances have prevented me from looking long or earnestly for other foci of



suppuration. Sometimes they may easily be recognized and opened into the larger abscess cavity by the finger; but when this is not the case, I think the patient's chances are better if the possibility of their presence is disregarded, as they are found in only a minority of cases, and as then they not infrequently open spontaneously into the original cavity.

Irrigation, drying the cavity, dusting it with iodoform, the insertion of a large, thick-walled, rubber drainage-tube, and light packing with iodoform gauze complete the operation, as I am in the habit of performing it.

The prognosis during all this period is in direct relation to the localization of the symptoms and to the absence of general sepsis. Nothing else is of much importance. Accordingly, a well-marked tumor, a moderate fever, a high-tension pulse not of excessive frequency, a limitation of the tenderness to the right iliac region, even if there it be exquisite, any evidence of continued peristalsis, such as the recognition of borborygmi by abdominal auscultation, are all favorable.

But at this or at any stage of this disease, from the earliest onset to the period of complete recovery, we may meet with quite a different set of symptoms. In the beginning the torsion of the appendix may be nearly or quite complete; or with moderate torsion there may be an exceptionally imperfect blood-supply; or in either case the bacteria present may be of especial virulence or in unusual quantity; or, finally, the resistant power of the individual may be markedly defective. According to the varying predominance of one or the other of these factors, we meet clinically with types of cases directly comparable with those conditions produced in animals by experimental inoculation with the colon bacillus. Two of these we have now very imperfectly considered,—the mild cases in which the peritonitis is an inconsiderable element and which usually end in recovery, and the cases of distinct circumscribed peritonitis running a more chronic course and ending either in resolution or, if more severe, in localized suppuration. Either with or without these precedent stages we may have a general septic peritonitis. If this results from spread by continuity,—the usual mode in which a localized peritonitis becomes general,—or by infection through the lymphatics of the appendix and meso-appendix, or by a slow leakage of inflammatory products through the appendix wall, or by the migration of bacteria along the same channels, its approach may be slow; if it follow the rupture of an abscess it will be much more rapid.

CASE VII.—In a case recently seen, in consultation with Dr. Joseph Martin and Dr. Thomas Yarrow, the patient had been in excellent general condition up to noon of the fourth day of his illness; temperature,  $101^{\circ}$  F. to  $102^{\circ}$  F.; pulse, 90 to 105; moderate vomiting, obstinate constipation. When Dr. Yarrow first saw him, *six hours later, the temperature had dropped to normal, the pulse was 120 and thready.* There was great restlessness; constant rejection of small mouthfuls of fluid; a distended board-like belly. When I saw him, within a few hours, the pulse was 140 and running; the temperature normal; consciousness perfect; restlessness incessant. No operation was advised. He died in a short time.

CASE VIII.—I saw, in consultation with Drs. Johnson, of Lawrenceville, and Elmer, of Trenton, Mr. B., a teacher in the Lawrenceville School, New Jersey. He had been apparently convalescing from an attack of appendicitis when, contrary to orders, he walked from one room to another. *He was at once seized with a violent abdominal pain, which was immediately followed by distention, vomiting, and symptoms of shock.* I operated a few hours later, irrigating and draining the purulent cavity, which contained a large quantity of pus, but he died the next day.

CASE IX.—An almost precisely similar case, seen at Princeton by Dr. Agnew and me, in consultation with Dr. Bergen, had a similar course and termination. In this case also operation was tried as a last resort.

But in either event it is usually of the fibropurulent variety, and is accompanied by much exudation. The patient soon presents the typical picture of diffused peritonitis: incessant restlessness, greatly-distended belly, tender everywhere to the lightest touch, dorsal decubitus, constant vomiting of small mouthfuls without much effort, thoracic respiration, obstinate constipation, absence of intestinal sounds, high fever, followed towards the end by subnormal temperature, cold sweats, and collapse.

It is of great interest, however, to note that even the cases which tend to run this course will occasionally recover when seen and operated on at the very onset of the generalized symptoms. In fact, if operation *precede* the development of septic paralysis of the intestines, a very fair percentage of such cases will recover; but after the latter phenomenon has appeared I regard the case as absolutely hopeless. If it is unmistakably present, it is, I

think, best to decline to operate, as we will have less difficulty in obtaining consent to operative interference where we can do more good, if there are fewer deaths, which, however unjustly, seem to the laity to be, so far as operation is concerned, in the relation of effect to cause.

But if there is any doubt about it, it is well to open, irrigate, and drain the abdomen. I have already called attention to the fact that the suppurative cases are among the most favorable examples of peritonitis, whether general or localized. When localized they are *very* favorable, and even in these general septic cases the more the suppurative process overshadows the toxæmia the better the patient's chances. It may be well to note a possible explanation of this fact. Reichel some years ago determined that by gradually administering increasing doses of pure cultures of pyogenic micrococci to the peritoneum of an animal an immunity against an extremely large dose of this poison could be produced.

The same immunity was acquired in the same way against the introduction of a sterile filtrate from the cultures and against the metabolic products of the staphylococci. Control experiments were uniformly fatal in animals not previously prepared.

Attention has been called by Binnie to the clinical differences between the rupture of a chronic pyosalpinx, even if of enormous size, and a case of very acute or so-called fulminating appendicitis with gangrene of even a small portion and escape of the contents.

CASE X.—I saw some time ago, in consultation with Dr. William Pepper, a child in whom, within a very few hours of the onset of the symptoms, there was *gangrene, not only of the appendix itself, but also, and apparently as a result of an overwhelming bacterial infection, of an adjacent portion of the ileum*. Distention was enormous. An enterostomy was done with a little temporary relief, but the child died soon afterwards.

The chances of the patient, if operated on in a reasonable time, are far better in the former than in the latter case. Operation within three hours of the very first symptoms of such an event has failed to save the patient. He dies, as Treves has emphasized, not of the inflammation, or still less on account of any suppurative process, but from a profound toxæmia. In the pyosalpinx there has been an opportunity for slow auto-inoculation; in the rapid gangrene of appendicitis there has been no time for this process. It is in such cases that we often find the flat, silent belly indicative of

absolute paralysis of the *whole* intestinal tract, no peristalsis remaining in any portion to force gas into any other portion; and we have all the symptoms of shock and collapse. Here also operation is useless and to be avoided.

But in the suppurative cases, for both the practical and theoretical reasons above given, if any sign of peristalsis remain—and this is the very best indication I know of as to interference or non-interference in these excessively grave cases—it is better to open and irrigate, even if the patient is liable to die on the table. Occasionally a desperate and apparently hopeless case will be saved.

Possibly the protective effects of auto-inoculation may help to explain the comparatively favorable results obtained in some of the later operations, though it would be pushing the idea beyond reason to base upon it any defence of delay. Yet I am sure that every surgeon present must have occasionally felt surprised when, in operating on these slow or so-called chronic cases of appendicitis, he has contrasted the relative mildness of the symptoms with the enormous quantities of fetid pus under high pressure which he sometimes evacuates.

CASE XI.—I saw recently, in consultation, a case in which *there were practically no general symptoms* beyond a temperature of 100° F., a furred tongue, and some malaise. The patient had been out of bed within a day or two. The physician in attendance declined to believe in the presence of pus, which seemed to me indicated by the local symptoms. He assented, however, to an operation, which showed the presence of *twelve ounces of markedly fetid pus*, the first gush of which came with such force that it was projected a foot or more from the patient.

The best immediate indication of gross perforation of the appendix, with escape of its contents into the general cavity, is sudden violent excessively acute pain, followed by rapid change of temperature, either rise or fall, and marked increase of pulse-rate with diminution of volume and force. If the sepsis be profound the belly may be flat; if a little less in degree it may be barrel-shaped. Vomiting is usually a conspicuous symptom of this, as it is of other forms of perforative peritonitis, except that resulting from perforation of the stomach. It often shows its usual inverse relation to normal peristalsis. In eight cases of perforative peritonitis in which the bowels moved freely up to the time of the accident, constipation immediately followed in five. In these the vomiting

was much more marked and persistent than in the remaining three where the bowels continued loose (Treves).

Of course in these cases operation must be immediate, and even then the mortality has been, and doubtless will be for many years, enormous.

*Recurrent and Chronic Relapsing Appendicitis.*

—There remains to consider briefly the subject of recurrent and of chronic relapsing appendicitis. Here again the most diverse views exist, and we are brought back to our original starting-point as a basis for discussion. If, as I believe, various mechanical factors enter into the production of acute attacks, and if quite commonly those factors are brought into play by digestive derangement, and if an acute attack does not of necessity leave a permanent lesion of an infectious type, it is obvious that a patient may have two or even more mild attacks and safely decline operation. If, however, after any and every inflammation of the appendix, the patient is left, as has been asserted, with what is practically a charge of dynamite in the abdomen, operation should be much more frequent than it has yet become.

We shall do well, both in discussion and in practice, to separate the recurrent from the chronic relapsing cases. The former are well illustrated by the following case.

CASE XII.—In December, 1889, a gentleman aged thirty-eight had a mild attack of catarrhal appendicitis. He was ill for two or three days; was out of bed in four days. He was treated by rest, starvation, salines, and calomel. *His attack followed immediately upon a too hearty meal of broiled lobster after a day's shooting.* In 1890 he was in New York and on a visit, and had another attack. I was telegraphed for and went over to see him, meeting in consultation a well-known surgeon who had been called in at once. We agreed as to the undesirability of an operation at that time, but later disagreed, the New York surgeon advising removal of the appendix as soon as convalescence was established and I dissenting. I based my advice on the fact that the second attack, like the first, was clearly due to over-eating when tired, and especially on the circumstance that *it again followed a meal of broiled lobster.* Moreover, neither attack had been of a dangerous type. The opposing views were submitted by the patient, at my suggestion, to Dr. Agnew, who decided in favor of delay, and subsequently to Mr. Treves in London, who coincided in that opinion. The patient has never had another attack.

I have seen many such cases, and I am sure that this will be the testimony of the medical men who are most capable of informing us on this branch of the subject. At present I feel quite clear that the outcry for operation after one or two *such* attacks is based on conceptions of the etiology and pathology of the disease which are so incorrect that they entirely vitiate the arguments founded upon them.

In chronic relapsing appendicitis the case is somewhat different. The interval then is not one of entire health; there are digestive disorders, flatulence, constipation or diarrhoea, and pain in the right iliac fossa, aggravated by motion, or exercise, or fatigue. The attacks themselves are of a higher grade of severity, are accompanied by the appearance of a tumor, which often never entirely disappears, and by distinct evidence of localized peritonitis. The general health suffers severely, and the patient is apt to be anæmic and emaciated. I have observed this especially in females.

CASE XIII.—In a case sent me from Bellefonte, Pa., by Dr. Seibert, the child, a little girl aged ten years, was reduced to a condition of such *chronic invalidism and exhaustion* that even during an interval it was a question whether she could survive the journey to Philadelphia; and yet the operation was of the easiest type, completed in ten minutes without trouble. The appendix was thickened and twisted and diseased, but had no important adhesions. *The improvement in health was immediate* and has been continuous.

In the majority of these cases which finally require operation, especially in those in which the persistence of the local symptoms during the interval is marked, pus is present in small quantity and surrounded by thick, firm adhesions.

CASE XIV.—On the other hand, as in the acute cases, very great local disease may be attended with almost no constitutional phenomena. In a patient of Dr. Fussell's I found a *degree of inflammatory thickening and of fusing together of cæcum, appendix, omentum, small intestine, and parietal peritoneum that nearly made the operation impossible* and excited in my mind grave fears for the ultimate result, *and yet the boy had been walking and playing and complaining of local pain only occasionally, and he made a rapid and uninterrupted recovery.*

CASE XV.—In a patient of Dr. Russell Johnson's, on whom Dr. Agnew and I operated,

there had been so *large a number of attacks, brought on by exertion*, that the young man was almost afraid to stir out of the house, and yet he was a *picture of health and was not in the least affected in spirits or otherwise*. The local pain was simply so severe that while it lasted it was crippling. The appendix was adherent to the brim of the pelvis.

CASE XVI.—A *healthy, robust* woman, sent to me by Dr. Snyder, of White Haven, had had between *one hundred and two hundred attacks*. The appendix was angulated and buried in a mass of omental adhesions.

The diagnosis may usually be made by the history, the localized pain, the variable tumor, etc. Not infrequently, especially where the early stage of a malignant neoplasm is suspected, the only possible diagnosis is by exploratory incision.

Even these cases do not invariably require operation. In some instances I have suggested it, and then have acquiesced in the patient's request for a period of delay, which has now in several cases extended over some years and seems likely to be permanent. Treves, who originally proposed the operation in 1877, has thought it necessary within a year to call attention to the fact that it has been performed recently without proper discrimination, and adds, "The circumstances which would justify an operation in these cases must be precisely defined, and it cannot be too emphatically stated that, in a fair proportion of instances in which the trouble has relapsed, no surgical interference is called for. "I am aware of many cases in which a patient has had three or more attacks of typhlitis, and has then ceased to be troubled with any further outbreaks. In some examples of the relapsing form much can be done by medical means, by diet, by attention to the bowels, and by placing the patient under conditions more favorable to a state of peace within the abdomen."

Here again, also, we have the old fable about the mortality of the operation being "practically *nil*," but Bull's statistics, just published, show a mortality of nearly two per cent., and he remarks that if he could add four fatal cases that he is aware of, it would be raised to more than two per cent., and, further, that five or six per cent. would be a fairer estimate if we struck an average of the work of individual surgeons. There is, however, good reason for believing that the mortality for the operation in skilful hands will be a low one. The experiments of Reichel, already alluded to, de-

monstrate beyond a doubt the possibility of a certain immunity resulting from auto-inoculation with pyogenic material. There seems to be good reason for believing that this comparative invulnerability thus acquired renders the peritoneum more indifferent to traumatism than in its normal condition. (See Case XIV.) It is a clinical fact that an intraperitoneal operation on a subject who has had several attacks of subacute or chronic peritonitis is, *ceteris paribus*, a less serious affair than if the same operation is done on a patient whose peritoneum has hitherto been uninvaded by disease or for operative purposes. Treves says as to this point, "In the operation for the removal of the vermiform appendix in cases of relapsing typhlitis, the little disturbance which follows extensive procedures occupying as long as one hour and a half can, I think, be explained only by an immunity acquired by the peritoneum after repeated attacks of inflammation. Moreover, in advanced cases the disproportion which is often noted between the constitutional disturbance and the local condition discovered at the operation appears to be capable only of the same explanation."

CASE XVII.—In another relapsing case just operated on for Dr. Fussell the appendix was buried in dense adhesions posterior to the cæcum, and was firmly adherent by its tip to the iliac vein. The union was so intimate that I tied off both tip and base and removed the intermediate portion, which showed a small perforation. There was present a general plastic peritonitis. The patient, who had only recently recovered from a severe attack, *was extremely emaciated and had the typical facies abdominalis*, and yet *six hours after the operation*, which took three-quarters of an hour, *his temperature was normal, his pulse 102, he had a movement of the bowels, and expressed himself as feeling better*. He is now making an excellent recovery.

If the indications for operation are clear, I think the question as to whether it shall be done between or during attacks must be unhesitatingly decided in favor of the period of quiescence, the operative difficulties being then much less, especially as regards the important question of possible general infection. In the recurrent type, if operation is to be considered at all, it would be well to take the inappreciable risk of waiting for another attack, which may never come.

In the chronic relapsing cases, however, if the surgeon, in deciding upon operation, limits himself to the following indications formulated

by Treves, which fairly express those of many surgeons in this country, myself included, he had far better take advantage of the interval. Operation is indicated when: 1. The attacks have been very numerous. 2. The attacks are increasing in frequency and severity. 3. The last attack has been so severe as to place the patient's life in considerable danger. 4. The constant relapses have reduced the patient to the condition of a chronic invalid and have rendered him unfit to follow any occupation. 5. Owing to the persistence of certain local symptoms during the quiescent period there is a probability that a collection of pus exists in or about the appendix.

The operation itself may be one of the easiest in abdominal surgery, or so difficult as to be impossible in its entirety, if due regard is had to the survival of the patient. (See Case XIV.)

There are no very radical differences of opinion as to its technique, so the details need not be mentioned. Such differences as do exist relate chiefly to the symptoms and conditions which demand or which justify the operation. Bull has well expressed the situation in this respect: "We need more carefully recorded cases not only of the patients who come to operation, but of those who have successive attacks relieved by medical measures. There are many gaps to be filled between the position of the surgeon who operates only when there are definite symptoms of chronic disease which have been found by operation to correspond with definite lesions of the appendix, and those who resort to operation after one or two attacks in individuals who have no symptoms, because they believe future attacks must occur in the order of nature and must endanger life. The position of the former may be too conservative, but I think it is 'up to date' with the knowledge we have at present. The attitude of the latter is unscientific, as their statements are not borne out by demonstration."

It is just to say, in conclusion, that, while I see no reason for joining in the outcry about the claims of appendicitis to be considered a purely surgical disease, the sum total of the relations of surgery to appendix troubles reflects the greatest credit upon that branch of the profession both in this country and abroad. The beneficent work done by surgeons has now fully established their right to be early participants in the management of cases to the later and more unfavorable stages of which they are so frequently called. Altogether apart from the extravagant claims of extremists, it is certain that the field of operative surgery in this disease is a steadily widening one, and that as

time goes on and the joint labors of progressive yet duly conservative men in both medicine and surgery begin to bear their fruit, we shall save, by increasing precision and exactness in diagnosis and treatment, many lives now unavoidably sacrificed.

The views above expressed may be summarized as follows:

1. The explanation of the great frequency of inflammation of the appendix is to be found in the following facts:

(a) It is a functionless structure of low vitality, removed from the direct faecal current; it has a scanty mesentery so attached to both cæcum and ileum that it is easily stretched or twisted when they become distended; it derives its blood-supply through a single vessel, the calibre of which is seriously interfered with or altogether occluded by anything which produces dragging upon the mesentery.

(b) In addition, there is almost always present a micro-organism—the *bacterium coli commune*—capable of great virulence when there is constriction of the appendix or lesions of its mucous coat or of its parietes.

2. The symptoms in a case of mild catarrhal appendicitis—general abdominal pain, umbilical pain, localized pain and tenderness on pressure in the right iliac fossa, vomiting, moderate fever, and slightly-increased pulse-rate—cannot at present with any certainty be distinguished from the symptoms, apparently precisely identical, which mark the onset of a case destined to be of the very gravest type.

3. It must be determined by future experience whether or not operation in every case of appendicitis, as soon as the diagnosis is made, would be attended by a lower mortality than would waiting for more definite symptoms indicating unmistakably the need of operative interference. At present such indication exists in every case if the onset is sudden and the symptoms markedly severe, and whenever in a mild case the symptoms are unrelieved at the end of forty-eight hours, or, *a fortiori*, if at that time they are growing worse.

4. It must be determined by future experience whether cases seen from the third to the sixth day, which present indications of the beginning circumscription of the disease by adhesions and which tend to the formation of localized abscesses, will do better with immediate operation with the risk of infecting the general peritoneal cavity, or with later operation when the circumscribing wall is stronger and less likely to be broken through. At present, operation is certainly indicated whenever a firm, slowly-forming, well-defined mass in the

right iliac fossa is to be felt; or, on the other hand, when a sudden increase in the sharpness and the diffusion of the pain and tenderness points to perforation of the appendix or breaking down of the limiting adhesions.

5. In the beginning of general suppurative peritonitis, operation offers some hope of success. In the presence of general peritonitis with septic paresis of the intestines, operation has thus far been useless.

6. Recurrent appendicitis of mild type, like acute appendicitis, frequently results from digestive derangements. Several attacks may occur followed by entire and permanent recovery, but it is as yet impossible to differentiate these cases accurately from those which do not tend to spontaneous cure. Operation is certainly indicated whenever the attacks are very frequent.

7. Chronic relapsing appendicitis is characterized by the persistence of local symptoms during the intervals and by more or less failure of the general health. It usually indicates operation.

8. In either the recurrent or the chronic relapsing variety operation should be advised according to the following indications formulated by Treves: whenever (1) the attacks have been very numerous. (2) The attacks are increasing in frequency and severity. (3) The last attack has been so severe as to place the patient's life in considerable danger. (4) The constant relapses have reduced the patient to the condition of a chronic invalid, and have rendered him unfit to follow any occupation. (5) Owing to the persistence of certain local symptoms during the quiescent period, there is a probability that a collection of pus exists in or about the appendix.

#### TREATMENT OF ALCOHOLISM BY STRYCHNINE NITRATE.

BREED concludes a paper in the *Medical News* of April 7, 1894, on this subject as follows:

1. That we have in this drug a remedy that actually, for a period as yet undetermined, removes the desire for alcoholic stimulation in the chronic inebriate, and that *without the least effort on his part*.

2. A remedy that removes the distress and gnawing at the epigastrium, so common upon the withdrawal of alcohol.

3. A remedy that tones up the nervous system, allays the insomnia, the flighty and other bad feelings in the head, the mental disturb-

ances, and the tremulous agitation and uncertainty of voluntary motions due to the withdrawal of stimulants.

4. A remedy that brings back the appetite and general physical vigor of the body.

5. A remedy that temporarily transforms a wholly demoralized creature into a man.

6. A remedy that is of great value in acute attacks of alcoholism.

7. Incidentally, a remedy that is an exceedingly good and safe heart-tonic.

8. More than all, a remedy that exerts a moral influence upon the patient, giving him what he had before wholly lost,—to wit, hope, enthusiasm, self-confidence, and courage, where before was despondency, abandonment, and despair; a steady, straightforward gaze, and a bright, youthful expression of the eye, which replaces the shamefaced, sneaking, apologetic air of total depravity of the chronic inebriate.

9. We have in the nitrate of strychnine not a remedy that will oblige a man to abstain from drink if he does not want to do so, and such subjects do not deserve one. From the results obtained by the gold cure, the silver-ash cure, the Keeley cure, etc., we may conclude that we have a remedy that is as efficient as any of these and much safer; a remedy, moreover, that is not secret, and can be used by men who know the action of drugs and can use them with discretion and safety to the patient.

#### THE EFFECTS OF QUININE ON PREG- NANCY.

A collective investigation of this subject is published in the *Indian Medico-Chirurgical Review* for February, 1894, the results of which are as follows:

1. The existence of pregnancy is no bar to the administration of quinine.

2. For fevers and other affections during pregnancy in which quinine is indicated the effects of the drug are more marked than those of any other.

3. That abortion following the administration of quinine is either the result of the original malady or the effect of idiosyncrasy.

4. That allowing for an idiosyncrasy, in cases in which a tendency to abortion exists, and in others as a matter of precaution, quinine is best administered combined with a sedative (opium).

5. Hence the old-standing view of the action of quinine on the duration of pregnancy is not borne out by the clinical experience collected in the replies.

# The Therapeutic Gazette

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## Leading Articles.

### THE VALUE OF BOILED MILK AS AN ARTICLE OF DIET.

EVERY practitioner of medicine knows that in the treatment of certain cases of diarrhoea, where an absolute milk diet is required, better results follow the use of boiled milk than of raw milk, and for this reason it has become a popular idea among the laity and members of the profession that cooked milk is the more digestible. However this may be in clinical experience, it is certain that experimental research does not justify this conclusion. Ten years ago the late Dr. Randolph, of Philadelphia, made an interesting series of experiments to determine this point. A number of men in perfect health were given raw milk to drink; an equal number, equally healthy, were given a similar quantity of boiled milk. An equal time after the ingestion of the liquid a hypodermic injection

of apomorphine was administered to each, and a careful examination made of the vomited matters to determine how far the process of digestion had proceeded. In every instance it was found that the raw milk was more digested than the cooked, and as Randolph graphically expressed it, "We obtained proof that in making milk, nature made that compound most easy of digestion."

The experiments of Crolas, on the other hand, seem to point to a different result, for he believes as a result of his studies that boiling has no action whatever on the casein or lactose, and removes from the liquid a small quantity of butter, which is entangled with the film of albumin which forms on the surface of the milk. He also thinks that boiling increases the quantity of the free soluble phosphates, and concludes, in opposition to the studies of Randolph, that boiled milk is equivalent, if not superior, to raw milk.

The correct solution of the problem probably lies in the class of cases to which the milk is administered. There is no doubt whatever that raw milk is more digestible than boiled to the healthy individual, and it is an undeniable fact that boiled milk is far more constipating, and that an attempt to place a patient upon a diet of boiled milk would more certainly tend to disorder digestion and assimilation than a similar attempt with the raw article. In Bright's disease, diabetes, and similar conditions in which a milk diet is desirable, we may therefore conclude that raw milk is the liquid to be employed, whereas, in cases of diarrhoea, the boiled milk is by far the best preparation. We have already pointed out in earlier leading articles that both raw and boiled milk have their digestibility very much increased by being somewhat diluted with any sparkling water, or by the addition of a sufficient quantity of salt to give a distinct flavor.

### THE TRUE VALUE OF METHYLENE-BLUE IN MALARIAL FEVER.

THE readers of the THERAPEUTIC GAZETTE who have carefully read the articles upon methylene-blue in the Progress columns during the last year must have obtained views very much in accord with our own concerning the value of this new medicament in paludal disease. It has now been tried in a sufficient number of cases of all kinds and all ages to give us sufficient ground to reach fairly positive conclusions as to its value. The studies of Ferreira upon the action of the drug in chil-

dren, those of Thayer in Baltimore, and of a number of other investigators in Europe and America seem to prove very positively that the drug is of value in all cases of malarial disease, although it does not possess the powerful antiperiodic properties of quinine. Its therapeutic indications, therefore, point to its employment in those persons who have an idiosyncrasy to quinine, or in those in whom quinine has failed to produce as beneficial results as is desired. The best way to administer it is in capsule or solution, in the dose of 2 to 3 grains twice or thrice a day, attempting to administer the fullest doses in cases of intermittent fever about two or three hours before the time at which the malarial attack is expected. It should be remembered that in some persons methylene-blue produces disagreeable symptoms, which generally consist chiefly in signs of irritability of the bladder. If these symptoms are excessive, it is possible that the methylene-blue is contaminated by arsenic. An important point in regard to its successful use in malaria is the fact that it must be continued for some time after all malarial manifestations have disappeared; indeed, after careful blood examination fails to show any signs of the malarial organism. A disadvantage in its use is the fact that relapses seem to occur with greater frequency in those who are supposed to be cured than in similar cases which have experienced relief from full doses of quinine.

#### *INTESTINAL INDIGESTION WITH FERMENTATION.*

IN an earlier number of the THERAPEUTIC GAZETTE we wrote a leading article upon the employment of creosote in the treatment of gastric indigestion associated with fermentation. There is another class of patients who suffer equally severely, not so much from gastric disorder as from the accumulation of large amounts of flatus in the small and large intestine, as the result partly of constipation and partly of atony of the duodenum in its digestive function. Frequently these patients suffer severely from pain in the region of the præcordium, which is so severe as to bring them to the doctor's office with the fear that they are suffering from cardiac disease. As a general rule no cardiac lesion will be discovered, but in its place there will be found evidences of dilatation of the transverse colon and a general tympanitic condition of the entire belly, with a particularly high pitched tympanitic note near the præcordium about the point where the

transverse turns to become the descending colon. It is at this point that the gas which is produced becomes lodged and reflexly causes not only pain, but marked cardiac palpitation. In other instances the pain is felt at other portions of the alimentary canal, and in nearly every instance the resulting discomfort is sufficient to make the patient very grateful for relief. In a certain proportion of cases this symptom disappears under the administration of a prescription, as follows:

R Salol, ʒi;  
Pancreatin, gr. xl;  
Oleoresin capsici, ʒxx.  
M. Ft. in pill No. xx.

If this is prepared by a careful druggist the patient will have no difficulty in swallowing the pill because of its size.

#### *THE DOSE OF GRAY OIL AND BICHLORIDE OF MERCURY HYPODERMICALLY IN SYPHILIS. A CORRECTION.*

THROUGH an error, the dose of gray oil was given as 10 to 20 minims in the editorial entitled "The Treatment of Syphilis by Hypodermic Injections," on p. 327 of the issue of May 15, 1894. The amount should have been 1 to 2 minims. The dose of bichloride of mercury recommended—namely,  $\frac{1}{10}$  grain—may be rapidly increased, if the patient stands the drug, to  $\frac{1}{4}$  or  $\frac{1}{2}$  grain, but  $\frac{1}{10}$  grain is not too small for a beginning dose.

#### *TREATMENT OF HYPERTROPHIED PROSTATE BY CASTRATION.*

IN the November, 1893, number of the THERAPEUTIC GAZETTE there appeared an editorial calling attention to the surgical treatment proposed by J. William White for the relief of the bladder symptoms dependent upon hypertrophy of the prostate. White, basing his conclusions upon a series of observations upon animals and on the post-mortem findings in the case of eunuchs, came to the conclusion that the prostate was a sexual organ dependent for its development on the presence of the testicles, and that by removal of the latter this gland could be made to atrophy. His laboratory experiments, conducted by Kirby, having proved the truth of these propositions, he further argued that an hypertrophied prostate would probably undergo similar atrophy in case the testicle is removed, this thought no doubt being



suggested by the effect of removal of the ovaries upon fibroid tumors of the uterus.

Griffith arrived at conclusions practically identical with those of White, excepting that he did not propose removal of the testicles as a means of curing prostatic hypertrophy. Since the publication of the leading article above referred to this proposition of White's has been practically carried out by himself and others with most gratifying results.

Ramm (*Centralblatt f. Chirurgie*) reports two cases of prostatic enlargement cured by double castration. The first case was kept constantly under observation after operation until the last of December, 1893. The prostate, which before operation was the size of a medium-sized orange, was shrunk into an almost flat mass. The patient during the day passed his water as well as ever, and was required to rise three times only during the night.

The second patient, sixty-seven and a half years old, was operated on in April, 1893. He first reported to the hospital in 1887 for the relief of urinary retention, and gave a history then of having suffered for fourteen years with difficulty in passing his water. After being relieved at this time he continued to suffer from attacks of retention, and had to use a catheter at intervals, sometimes repeatedly during a single hour. In 1892 suprapubic puncture was made. At this time the patient was suffering from cystitis, the bladder was distended until it reached to the umbilicus, the prostate was huge, and catheterization most difficult; the urine was extremely offensive. On the night following castration the patient passed his water without the use of an instrument. In two weeks the prostate was markedly lessened in size. The third week the bladder was completely evacuated by voluntary effort, the patient urinating five to seven times during the day. Six weeks later, in the erect posture, he could urinate without trouble, projecting a stream outward for a distance of twenty inches. At the time of reporting the prostate as atrophied the patient was never compelled to use a catheter, he urinates four or five times a day, once at night, has no symptoms of cystitis, and is practically able-bodied.

Ramm concludes as a result of his studies that the prostate is a sexual organ, is an organ which develops at puberty, and that malformations and early castration cause it to remain undeveloped, and even after it has attained its full growth castration will cause it to atrophy; that hypertrophied prostate will also atrophy after castration, this lessening in volume beginning almost immediately and continuing

until the enlargements entirely disappear; and, finally, that the fact that castration may cause atrophy of the prostate is of the highest therapeutic importance, since there is thus given a means by which obstruction to urine when it depends upon prostatic enlargement may be safely and permanently removed.

In the paper read by White before the genito-urinary surgeons, May 29, a number of other cases were detailed. It is worthy of note that in practically all obstruction symptoms were markedly relieved within the first one or two days, that the atrophy of the prostate was rapid and progressive, and that cure was complete. The operation itself is practically free from danger. It implies the removal of organs which, from the advanced age of patients suffering from enlarged prostate, are no longer functional, and it promises a speedy cure of an affection in the treatment of which most surgeons are content with palliation, and the only radical treatment heretofore proposed—*i.e.*, prostatectomy—still showing such a large death-rate that there is a natural hesitation in recommending it to those who by simpler and less radical means may be made to enjoy many years of comparative comfort. This comfort is, however, only comparative and does not compare with the relief which they would experience with the obstruction to urine entirely removed. Still, more cases are needed before the merits of this operation will be clearly appreciated, yet a sufficient number have been brought to fully justify the surgeon in castration in suitable cases.

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#### INTRAOCULAR INJECTIONS OF ANTISEPTIC SUBSTANCES AS A THERAPEUTIC MEASURE.

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WE have on more than one occasion referred to subconjunctival injections, particularly of bichloride of mercury, as measures suited to control infection processes,—for example, sloughing of the corneal tissue,—or to relieve the manifestations of ocular syphilis, especially when located in the uveal tract, and in the Progress columns of the GAZETTE the most important papers bearing upon this subject have appeared in abstract. In the main, the conclusion has been reached that this is a therapeutic procedure worthy of respect and that it deserves further trial.

To a certain extent these subconjunctival injections, in their modern revival, are an outcome of a proposal by Abadie to control sympathetic ophthalmitis by introducing into the vitreous chamber 2 minims of a 1 to 1000 solu-

tion of sublimate. Indeed, this surgeon, in 1890, not only proposed this plan of treatment, but published the records of cases in which he had successfully employed it. After his announcement occasional reports appeared in the journals confirming his observations, but more frequently the experience of those who followed this recommendation was such that the method was practically abandoned. Abadie himself expressed his willingness to substitute for it subconjunctival injections, provided the latter were proved to be more efficacious, and in August of the past year he gave distinct preference to the subconjunctival injections, although still maintaining that indications for intraocular medication occasionally presented themselves.

Comparatively recent experimental inquiry concerning the effects of intraocular injections of various antiseptic substances has revived interest in the matter, and during the meeting of the International Ophthalmological Congress, to be held in August of the present year at Edinburgh, there will be a special session devoted to this subject.

Two researches bearing directly upon the matter have appeared within the past year, the one by the writer of this article, carried on in the Laboratory of Experimental Therapeutics in the Jefferson Medical College and published in the *Journal of the American Medical Association*, October 21, 1893, and the other by Dr. Chasseaud, from the Laboratory of the Royal College of Physicians in Edinburgh and recorded in the *Journal of Pathology and Bacteriology*, November, 1893, a brief notice of which had previously appeared in the *Ophthalmic Review*, December, 1892.

These experimenters injected various antiseptic substances into the vitreous chamber of rabbits, and noted the effect with the ophthalmoscope and later with the microscope. In the American research the injections comprised bichloride of mercury (1 to 500, 1 to 1000, and 1 to 5000, respectively), cyanuret of mercury (1 to 1000), aqua chlorinata (official strength), blue pyoktanin (1 to 1000), and bichloride of iodine (1 to 1000). The list of drugs employed by Dr. Chasseaud was more extensive, and included corrosive sublimate, carbolic acid, tincture of iodine, camphorated naphthol, hydronaphthol, eucalyptol, boric acid, iodoform, oxycyanide of mercury, peroxide of hydrogen, creolin, pyoktanin, and aqua chlorinata.

Both experimenters found that the last-named drug could be introduced into the posterior chamber of the eye without serious disturbance, and Dr. Chasseaud has reached the

conclusion that it is the only substance which fulfils the necessary conditions for a useful intraocular antiseptic, although he is convinced that various fluids may be injected into the vitreous with safety. He found that corrosive sublimate and carbolic acid, owing to their stable compounds with albumin and the inflammatory reaction which they produce, are not so useful as some other less powerful antiseptics; that tincture of iodine, camphorated naphthol, hydronaphthol, and other antiseptic oils are far too violent in their action and cause disorganization of the eye; that boric acid and iodoform are weak and non-irritant; that oxycyanide of mercury and peroxide of hydrogen are good antiseptics, but cause opacities in the vitreous; that creolin is doubtfully antiseptic and very irritant; and that pyoktanin gives rise to neuritis and degeneration of the optic nerve.

The writer's results were less encouraging, as in twenty-four eyes, injected with the substances previously named, only one escaped positive permanent lesion, easily visible with the ophthalmoscope, and situated in the vitreous, choroid, or retina. The one exception, as before mentioned, occurred with aqua chlorinata. Neither were the effects of these substances potent in checking purulent inflammation called into existence by staphylococci emulsion injected into rabbits' eyes; but in one mongrel cur a hyalitis was apparently cured by sublimate injections.

It is evident, then, that there is some hope that aqua chlorinata may prove a useful intraocular antiseptic, although how far these results may be applicable to man, as Dr. Chasseaud concludes, it would be difficult to say. Evidently, as the writer suggested in his first paper, and as Dr. Chasseaud also indicates, a series of control experiments should be performed on dogs, and the study of the relations of the chemical composition of the vitreous to that of the fluid injected should be more exact.

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## Reports on Therapeutic Progress.

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### THE ACTION OF THE CARLSBAD THERMAL WATER ON THE STOMACH FUNCTIONS.

JAWORSKI has investigated the action of the Carlsbad thermal water, and found that it excited the secretion of acid and pepsin by the stomach and promoted the passage of the stomach's contents into the intestine. When, however, it was used for from four to six weeks, he

found that the acidity of the stomach was diminished, the secretion of pepsin steadily lessened, the resorptive power suffered, so that in certain cases no irritant longer sufficed to obtain gastric juice of digestive power. On too long use of the water the digestive power was wholly lost. Only in a small number of cases were acidity and digestive power raised. The mechanical function seemed likewise in a few cases to be increased.

These unexpected results induced Ewald and Sandberg to try the water for four weeks in the case of ten persons. Their results contradict Jaworski's.

Finally, W. SPITZER (*Therapeutische Monatshefte*, April, 1894) endeavors to solve the question. Having first satisfied himself that single doses of the water promote the gastric secretion in healthy individuals, he examined systematically eighteen persons suffering with gastric disorders. Of the eighteen, five suffered with chronic mucous catarrh, two of them with severe grades (atrophy?); three had excess of HCl (one with motor insufficiency); one had cancer of the stomach (?) with motor insufficiency; three had pure atony; six suffered with various forms of nervous dyspepsia (an-acidity, nervous eructations, gastralgia, etc.). The persons experimented on received early in the morning, fasting, the thermal water and Carlsbad salt; one hour later an Ewald test-breakfast; the gastric contents were removed in from one to two hours later.

The results obtained are as follows:

1. In most of the cases the motor power was increased; in none of them was it injured. The result was most decided in the cases of motor insufficiency which were not too severe. Even in the doubtful case of cancer, in which in the first days a residue of about three hundred cubic centimetres was expressed from the fasting stomach, after three weeks' use of the water the stomach was found empty one and a half hours after the test-breakfast.

2. After the completion of the cure the pepsin action showed no essential diminution in cases where it had been present at first, and in the mild cases of chronic catarrh there was a decided increase.

3. The HCl secretion varied, but only within physiological limits. The superacid values sank to normal, but not essentially lower. The two cases of atrophic gastritis exhibited after, as they did before, treatment no trace of HCl. But the doubtful case of cancer which showed before notice free HCl exhibited it afterwards in profuse quantity.

4. The pepsin action proved not to be de-

pendent upon the acidity, so that when the acidity fell the pepsin secretion showed no diminution.

5. The rennet ferment showed, on quantitative testing, never a diminution, but often an increase.

#### METHYLENE-BLUE IN MALARIAL AFFECTIONS.

ERNST FRATNICH (*Therapeutische Monatshefte*, April, 1894), following Guttman, has employed methylene-blue in four cases. The urine was stained intensely blue, but contained no albumin. No strangury occurred. The stools and saliva were intensely blue. Plasmodia were demonstrated in the blood in two cases. The remedy seems to have stopped the fever and cured the patient in three of the cases. In the fourth case quinine was administered by mistake.

#### THE TREATMENT OF CHRONIC RHEUMATISM.

We published not very long ago an abstract of an article by DUJARDIN-BEAUMETZ on the treatment of acute articular rheumatism. The same author has in a later contribution (*Bulletin Génér. de Thérapeutique*, February 15, 1894) critically examined the therapeutics of the chronic form of the disorder. In that form of rheumatism, accompanied with deformities, with no history of an acute attack or of cardiac lesion,—as that, for example, which constitutes gout of females,—the medication should better be directed towards combating a disordered nutrition. It is in this condition that arsenic and the iodides appear to be better indicated. Arsenic, however, is often followed by painful phenomena, and it is in these cases that iodine or the iodides should be exclusively used. The iodides are to be preferred, and the following prescription is recommended:

R Iodide of potassium, 4 drachms;  
Water, 8 ounces. M.

Sig.—A dessertspoonful in sweetened black coffee after each principal meal.

The chloride of gold and sodium, recommended by some practitioners, the author believes to be irritant, notwithstanding its alleged beneficial influence over nutritive processes. In cases of rheumatism attended with painful symptoms the salicylates do no good, and the only remedy that has apparently given satisfactory results in such cases is phenacetin, particularly paracetphenetidin in doses of .5 gramme, twice or thrice a day, in the form of cachets. Besides internal medication, diet is of the utmost

importance; the latter should consist of meats well done or rare, green vegetables, generous wines, and the use of milk, especially while the patient is taking the iodides. To make the treatment more complete, massage, electricity, and balneotherapy should be added under proper conditions.

In the true form of chronic rheumatism, particularly in the acute stages, the salicylates, asaprol, and more rarely phenacetin, may be employed with advantage. Certain other remedies are of service not only for the time being, but also to prevent relapses. The author refers to the following mixture, alleged to be advantageous, but which he has not employed, mentioning it only on account of its popularity:

- R Powder of colchicum bulbs, 5 drachms;  
 Powder of bryonia root, 3 drachms;  
 Powder of betony, 12 drachms;  
 Powder of gentian, 3 drachms;  
 Powder of common chamomile, 3 drachms.  
 M. and divide in 15-grain powders.  
 Sig.—2 powders a day.

Another plant thought to possess remedial virtues in chronic rheumatism is the bean, especially the flowers. But, after all, the best results in this form of the disease are obtained from external medication, and it is these cases in which massage, electricity, and balneotherapy are of peculiar advantage. Massage, methodically applied, combats not only the functional weakness of the articulations, but especially so the muscular atrophy accompanying this kind of arthritis. Electricity, through the continued or slowly-interrupted currents, also modifies the atrophied muscles. The utility of balneotherapy is unquestionable, particularly by means of thermal waters. Diet, of course, is important. Without entirely suppressing meat or wine, a mixed diet, with a large amount of vegetables, is to be preferred. Highly-seasoned food should be avoided. The condition of the bowels and kidneys should claim attention; the regularity of their functions should be maintained by the administration of proper laxatives and diuretics. The latter treatment may also be applied to rheumatic diathesis, where, indeed, hygiene and balneotherapy are the most important measures to be employed.

#### THE TREATMENT OF DIARRHŒA.

Under the above title, SAPELIER (*Bulletin Génér. de Thérapeutique*, February 15, 1894) writes an exhaustive article. For the indigestion that accompanies the disorder he believes that an expectant treatment, diet, and stimulants

are sufficient. To enhance the elimination of toxines resulting from the indigestion, saline purgatives are indicated. In *acute intestinal catarrh* saline purgatives are of service, followed by the administration of this mixture:

- R Purgoric, 1 to 3 drachms;  
 Subnitrate of bismuth, 1 to 2 drachms;  
 Extract of rhatany, 1 drachm;  
 Syrup of comfrey, 2 ounces;  
 Lime-water, q. s. for 5 ounces. M.

Sig.—A dessertspoonful every two hours, according to indications.

A milk diet, bouillon deprived of all fat, and lactated or plain lemonade are to be conjoined.

In *chronic intestinal catarrh* antiseptic purgatives are to be employed, the first of which is calomel in large quantities (8 to 10 grains at one dose) or in fractional amounts (1 to 2 grains a day during several days). Opium may be associated. Regarding intestinal antiseptic remedies, the author speaks of the salicylate of bismuth, betol, salol, benzonaphthol, benzoate of bismuth, dermatol, resorcin, lactic acid, etc. The salicylate or the benzoate of bismuth may be given in doses of from 30 grains to 6 drachms a day; salol, in from 15 to 45 grains every twenty-four hours, in cachets of 8 grains each; the same dosage is mentioned for betol. Lactic acid is recommended in the form of a lemonade, according to the following formula:

- R Lactic acid, 5 drachms;  
 Simple syrup, 6 ounces;  
 Boiled water, 1 quart.

The author also advises the use of benzonaphthol in doses of 1 drachm during the twenty-four hours, in cachets of 8 grains each. The association of opium is thought to be of service, and the following combination is recommended:

- R Subnitrate of bismuth, 8 ounces;  
 Carbonate of calcium,  
 Phosphate of calcium,  
 Powder of rhatany, of each, 2 ounces;  
 Powder of crude opium, 45 grains.

This is to be administered in the lactated lemonade, in doses of from 2 to 3 dessertspoonfuls a day, each dessertspoonful containing 1 drachm of bismuth, 15 grains each of carbonate of calcium, phosphate of calcium, and the powder of rhatany, and 1 grain of the powder of opium. Owing to the disagreeable taste of the opium, it is advantageous to administer it in the form of laudanum in rectal injections of starch; 5, 10, or 20 drops

of laudanum are used for one injection, the injection being exhibited after each passage. These injections diminish the rectal tenesmus as well as the colicky pains.

In *hemorrhagic diarrhæa* recourse is had to the administration of the perchloride of iron by the mouth as well as by the rectum, associated with the hydrochlorate of morphine. In the same conditions alum is of advantage, and may be administered according to these prescriptions:

1. R Pulverized alum,  
Catechu, of each, 5 grains.  
M. and make four pills.  
Sig.—3 to 6 pills per day.
2. R Alum,  
Catechu, of each, 2 grains;  
Crude opium,  $\frac{1}{4}$  grain;  
Syrup of red roses, q. s.  
M. and make one pill.  
Sig.—12 pills per day.

For *chronic catarrhal diarrhæa* the treatment is thus summarized by the author: (a) Absolute milk diet; a small cup of milk should be taken in a slow manner every two hours. To this amount of milk may be added a dessertspoonful of lime-water or Vichy-water. (b) At the same time a cachet of either of the following combinations may be administered:

1. R Benzonaphthol,  
Benzoate of bismuth, of each, 5 grains.
2. R Benzonaphthol, 5 grains;  
Salicylate of bismuth, 8 grains.

Or,

R Dermatol, 5 grains.

(c) Similarly every two hours, but in the intervals between the cups of milk, a dessertspoonful of either of the following mixtures may be taken:

1. R Elixir of paregoric, 1 to 2 drachms;  
Tincture of catechu, 2 to 4 drachms;  
Syrup of comfrey,  
Syrup of quince, of each, 1 ounce;  
Peppermint-water, q. s. for 5 ounces.
2. R Extract of rhatany, 1 drachm;  
Syrup of morphine,  
Syrup of quince, of each, 12 drachms;  
Lime-water, q. s. for 5 ounces.
3. R Liquid perchloride of iron, 8 to 15 grains;  
Sydenham's laudanum, 20 to 30 drops;  
Mucilage of gum arabic,  
Simple syrup, of each, 1 ounce;  
Cinnamon distilled water, q. s. for 5 ounces.

(d) In the intervals between either of the preceding mixtures and the milk accompanied

with the cachets, the lactated lemonade mentioned before may be administered in glassfuls. (e) If there is much tenesmus, after each passage a starch injection with 5 or 10 drops of Sydenham's laudanum may be employed by means of a small syringe. (f) At the same time warm applications to the abdomen should be used, by means of flannel or rubber bags filled with warm water. If flannel is used, this may be dipped in the following liniment:

R Oil of hyoscyamus,  
Camphorated oil of chamomile,  
Rousseau's laudanum, of each, 1 ounce.

In the *diarrhæa* of warm climates the author refers to Le Dantec's prescription, which is as follows:

R Saturated chloroform-water,  
Distilled water, of each, 4 ounces.

Sig.—In teaspoonfuls by the mouth several times in the course of the day.

For *mountain diarrhæa* the best treatment is said to consist in the use of intestinal antiseptics, particularly the biniodide of mercury in solution, and pepsin. The mercury is given fifteen minutes before and the pepsin (in doses of 8 grains) two hours after each meal.

In the *diarrhæa of Asiatic cholera*, as well as in the simple choleraic forms of diarrhoea, salol in large doses is said to be an excellent remedy. In the epidemic of Asiatic cholera at Nijnii-Novgorod, in 1892, Volkovitch gave salol in doses of from 2 to 4 drachms in the twenty-four hours, beginning with 15 to 30 grains as the first dose, according to the condition of the patient, and then repeating the same amount every three hours, or every four, five, or six hours if improvement persisted. Under this treatment, in the first twelve hours the diarrhoea diminished and the passages ceased to be rice-water-like, and nausea and vomiting disappeared. No symptoms of poisoning by the drug were noticed, even when the remedy was employed in large quantities. To children, salol may be administered every three or four hours, in doses of two grains for each year of the age.

The treatment of *sporadic dysentery* is thus summarized, according to Grasset:

1. A draught of water before breakfast.
2. Followed, every two hours, by a bowl of milk, and with this a cachet of this combination:

R Benzonaphthol,  
Benzoate of bismuth, of each, 5 grains.

3. If this is not sufficient, a spoonful of the following mixture :

R Ipecacuanha, 1 to 2 drachms.

To be infused in 3 ounces of water, and to which is added 1 ounce of syrup of poppies.

4. Morning and evening a rectal injection of 1 to 2 pints of borated water of the strength of two per cent., followed by another injection of linseed (1 pint), with 15 to 150 grains of benzoate of bismuth and 10 drops of Sydenham's laudanum.

5. The patient is allowed to take gradually of ordinary mixed diet. The antiseptic cachets are continued for a long time.

6. A change of climate, as, for instance, a stay at a health resort.

*Syphilitic diarrhœa* yields to treatment by the specific remedies. The diarrhœa occurring in acute rheumatism, unless it be severe, is better left alone. That of *arthritis* requires a constitutional treatment. The *diarrhœa of tuberculous patients* may be treated in the same manner as the chronic form already referred to. When the diarrhœa is the result mainly of paludic intoxication, quinine, of course, is the remedy *par excellence*.

#### TREATMENT OF TUBERCULAR PERITONITIS BY INSUFFLATIONS OF AIR.

It has been demonstrated in some instances that air exercises a special action on tubercular peritonitis. It has been found sufficient to open the abdomen, exposing this to the air for a few moments, the procedure being followed often by a cure. Bearing these facts in mind, DURAN (*Revista de Ciencias Médicas de Barcelona*) has employed the following method in two cases of tubercular peritonitis accompanied with ascites. After evacuating the liquid by means of a common trocar,—in one case he removed eight litres (fourteen pints), and in the second case, twelve litres (21.1 pints),—he insufflated as much air as possible into the peritoneal cavity through the same trocar. The air had previously been made to pass through caustic potash moistened with phenic acid. The air was allowed to remain in the cavity for a few moments and then let out, after which a light compress was applied. The patients were somewhat feverish and had slight nausea during two days. Tympanitis persisted for about eight days and then it began to subside. Gradually the abdomen regained its normal size, and in about six weeks a complete cure was effected. These two cases are certainly

interesting, and the method employed seems to be worthy of further trial. Its application is, indeed, simple and devoid of danger as long as sufficient antiseptic precautions are taken.—*La Médecine Moderne*, March 3, 1894.

#### EXOTHYROPEXIA IN EXOPHTHALMIC GOITRE.

JAROULAY (*La Médecine Moderne*, March 3, 1894) relates a typical case of exophthalmic goitre occurring in a young lady nineteen years of age, and two other cases of goitre without exophthalmia, in all of whom the practice of exothyropexia produced excellent results. In all of the three cases the disappearance of the palpitations, the excitement, and the tremors coincided with the diminution of the goitre. In one of the cases the thyroid assumed its normal size and recovery ensued. The young lady, in whom the disease was typical, suffered a relapse, but after a second operation again experienced the same good results as she did after the first exothyropexia.\*

#### THE TREATMENT OF CHOREA.

In an interesting article DUJARDIN-BEAUMETZ (*Bulletin Génér. de Thérapeutique*, March 15, 1894) reviews the therapeutics of chorea, and then gives his personal experience in the matter. In chorea of rheumatic origin, antipyrin does good in doses of 4 grammes (60 grains) per day. According to Legroux, this medication brings about a cure in from fifteen to twenty days of treatment, this result being obtained especially in the declining period of the malady. Antipyrin does not suffice in serious cases; in these instances chloral in large quantities is the better remedy. Chloral is well borne by children. Bouchut has given it in doses of from 3 to 5 grammes (45 to 75 grains) in the twenty-four hours. Local measures, in both mild and grave cases of rheumatic chorea, are advisable, such as cold-water douches, or, better still, ether spraying along the vertebral column. In some cases massage and gymnastic exercise are of advantage, the latter being particularly indicated in the declining stages of the disease. In hysterical chorea the treatment is different, particularly when the signs of the nervous element are well established. In this form of the disorder bromide of potassium and hydrotherapy are the

\* Exothyropexia is the operation for goitre in which the gland is loosened as much as possible and brought outside the incision, where it is allowed to atrophy.—Ed.

best agents and more apt than others to bring about a cure. Bromide of potassium must be given in large doses,—that is, from 2 to 4 grammes (30 to 60 grains) a day. The following solution is recommended :

R Bromide of potassium, 15 grammes (℥iv);  
Water, 250 grammes (℥lxxvi). M.

Sig.—2 to 4 spoonfuls a day in a little black coffee.

Sometimes it is necessary to associate a tonic. If chlorosis exists, as in the case of young girls, arsenic is given at the same time. Hydrotherapy is a necessary adjuvant, since it acts not only as a stimulant to the nervous system, but also combats successfully the depression caused by the prolonged administration of the bromides, especially the potassium salt. This measure is best applied in the form of a cold douche, first over the vertebral column, and, finally, in the form of a warm douche over the lower extremities. When the nervous excitement is extreme, lukewarm douches are to be employed at the beginning of this treatment, the temperature of the water being gradually diminished. In some cases the disease is so intense as to make the douches difficult of application; in such instances the body should be wrapped with wet sheets for a period of from ten to fifteen seconds, after which the patient is to be covered with warm clothing. Massage and gymnastics may also be applied in suitable cases, taking the same precautions referred to in speaking of the treatment of rheumatic chorea. In the paralytic form of the disease the bromides should be avoided. In these cases wrapping the body in wet sheets is the best measure to be employed, and in regard to the use of drugs, hyoscyamine, as proposed by Oulment, is but little employed now. Magnan has suggested the use of hyoscyne hypodermically. The following formula is recommended :

R Hydrochlorate of hyoscyne, .01 gramme (gr.  $\frac{1}{100}$ );  
Boiled water, 5 grammes (℥zi). M.

Sig.—1 to 2 milligrammes (gr.  $\frac{1}{100}$  to gr.  $\frac{1}{50}$ ) of the active principle for each injection.

Finally, erosions and ulcerations of the skin, which occur as inflammatory complications, should be treated with antiseptic lotions. According to Dujardin-Beaumetz, there is no specific treatment for chorea.

#### INTRAVENOUS INJECTIONS OF CORROSIVE SUBLIMATE.

At the meeting of the Eleventh International Medical Congress, in Rome, GUIDO BACELLI (*Berliner Klin. Wochenschrift*, March 26, 1894)

said that intravenous injections had been suggested by him and employed for the cure of malaria. Professor Nothnagel maintains that they are unnecessary, as subcutaneous injections can accomplish just as much without disagreeable consequences. But Bacelli's results, published in 1890, were brilliantly successful as regards the treatment of severe forms of malaria with intravenous injections of neutral salts of quinine, and they contradict Nothnagel's opinion. Since then Bacelli has experimented with corrosive sublimate given by intravenous injections for syphilis. Experiments upon animals were tried first. He then tried the new method in two cases of cerebral syphilis which had resisted cure by other methods, including inunction and hypodermic injections of mercury and iodide of potassium in large doses. The results were excellent. Other cases followed, so that now the method is employed by many Italian physicians. The solution Bacelli employs is as follows :

Hydrarg. bichlor., 1 part;  
Sodii chlor., 3 parts;  
Aq. dest., 1000 parts.

The skin is cleansed and rendered aseptic, and a syringe of the solution is injected into a vein at the elbow, back of the hand, or thigh. The veins are first made prominent by constriction. The injection must be into the lumen of the vein, otherwise pain and swelling will result. In a few minutes (five to six) mercury is excreted in the saliva. The "cure" begins with the injection of 1 milligramme of corrosive sublimate daily,—that is to say, 1 cubic centimetre of the solution (1 to 1000); then the quantity increases from 2 to 8 milligrammes (the maximum dose). For four milligrammes a two-per-cent. sublimate solution may be employed, so as to avoid the injection of too large a quantity of fluid. In exceptional cases he begins the treatment with doses of 4 to 5 milligrammes.

Bacelli calls special attention to the following points: 1. The small quantity required. 2. The possibility of overcoming many symptoms quickly,—symptoms which indicate direct blood-poisoning with the syphilitic virus. 3. The benefit and widely-distributed action upon vessel walls which are the specially-favored seat of syphilitic alterations.

Bacelli also employs sublimate injections for the cure of echinococcus cysts. The cyst is punctured and about thirty cubic centimetres of the fluid withdrawn through a trocar; 20 cubic centimetres of one-per-mille sublimate solution are then injected, the trocar withdrawn

and a dressing applied. In five days the patient is dismissed cured. The parasite is killed, and the subjective and objective symptoms subside by degrees.

#### TREATMENT OF TYPHOID FEVER WITH LACTOPHENIN.

Lactophenin is soluble in water; it forms a crystalline powder of a slightly bitter, not unpleasant, taste. It has been tried successfully in the treatment of a variety of disorders. PROFESSOR R. VON JAKSCH (*Centralblatt für Innere Medicin*, March 17, 1894) reports its use in eighteen cases of typhoid fever. Among these were cases with a temperature remaining for days above 104° F., great clouding of the senses, and extreme prostration of the strength; also cases with severe symptoms on the part of the kidneys and some with severe hypostatic pneumonia.

He is quite willing to admit the possibility of chance in these favorable results; but, aside from the favorable results, there were other advantages observed at the bedside which distinguished this from other antipyretics and sedatives. The dose was 7 to 15 grains lactophenin, given in starch capsules. Just according to the antipyretic and quieting action produced in each case, this dose can be repeated during the day to as much as would amount to 6 grammes a day.

Von Jaksch has thus far observed no harmful action from this remedy. Besides these eighteen cases of typhoid fever, he has also used it in thirty-three cases of the most varied diseases, including polyarthritis, influenza, scarlatina, sepsis, etc. Here, also, far more than a thousand separate observations showed neither harmful action nor any unpleasant one to the patients. Dr. Riedel will report these observations at length elsewhere. In one single case, after the first dose of ½ gramme, vomiting and illness occurred; the succeeding doses caused no discomfort, and the remedy worked as well as in the other seventeen cases. Twice they observed a somewhat arrhythmic pulse. As this was not found in hundreds of other observations, it may be questioned whether it should be blamed upon the action of the lactophenin. He also adds that in neither blood nor urine were symptoms observed which would indicate an unfavorable action of the fluid.

The urine showed in the cases treated with lactophenin the para-amidophenol reaction. The lactophenin excels because the reduction of temperature is gradual and lasts for hours, and, further, the increase of temperature is not

accompanied by a rigor, even when the change of temperature is rapid. There was one exception to this.

Lactophenin has an uncommonly calming effect on the typhoid patient. Delirium vanishes, the senses become clear, and, without exception, the patients rejoice in a subjective healthfulness such as Von Jaksch has until now never observed under any other mode of treating typhoid. It was also noted that hunger soon occurred in all cases; in fact, most of them as soon as lactophenin had been given a few days, and they were speedily cured.

It is still not possible to decide how far chance played a part here, as all the cases which he had observed since using lactophenin were those rapidly cured, or how far this rapid favorable course is to be ascribed to the lactophenin.

While withholding final decision as to its absolute value, and whether in it a specific for typhoid fever has been found, Jaksch warmly commends lactophenin on the strength of these observations.

#### INTOXICATION WITH LYSOL AND CARBOLIC ACID.

That lysol, although less poisonous than other antiseptics, must be kept out of the reach of the children we are reminded by DR. FRIEDBERG (*Centralblatt für Innere Medicin*, March 3, 1894). After referring to two other cases recently reported, he tells of one which came under his care. A child one year old drank about ten grammes pure lysol. The physician called ordered warm milk, which the child drank without vomiting, and he then sent it to the hospital. Here its stomach was washed out with a pint of warm water. Then 15 grammes of a mixture of magnesia was introduced through the stomach-tube. This was followed by a second vomiting. The child could not swallow milk. It recovered rapidly, the cauterized places healing well. It was evident that only a very small amount of the lysol was absorbed, as the urine remained unchanged.

He also reports a curious case of poisoning with carbolic acid. A woman forty-one years old used, by mistake, a quart of two-and-a-half-per-cent. solution of carbolic acid as a clyster at 10 A.M. In five minutes she became unconscious. A clyster of 500 grammes of lime-water was given promptly; at first most of this was retained, then spontaneously evacuated, the patient being quite unconscious; 4 grammes of a solution of 1 part of camphor to 4 parts of olive oil were given subcutaneously. At 1 P.M.



the pulse was stronger and breathing quiet; the patient swallowed wine without awakening; another evacuation occurred; 10 grammes of a solution of sulphate of sodium (10 to 100) was given subcutaneously. At 2.30 P.M. the patient recognized her surroundings; she was very weak; the next day she was well; there was no change in the urine.

*A CASE OF PSEUDO-BILIARY COLIC WITH  
OBSTRUCTION OF THE COMMON  
DUCT. SOME ACCOUNT OF  
THE PHARMACOLOGICAL  
ACTION OF CALOMEL  
AND OLIVE OIL.*

VICTOR SCHULTZ reports at length (*Berliner Klinische Wochenschrift*, No. 6, 1894) a case of apparent biliary colic, and the observations and examinations by which he proved that there were no gall-stones present. He found that olive oil produced a marked increase in the secretion of bile, and that the favorable action of calomel on gall-stones and diseases of the bile-duct is not due to an increase in the secretion of bile, but to its disinfecting properties, which rapidly change the composition of the bile and thus diminish the abnormal irritation of the mucous membrane of the gall-bladder.

*TREATMENT OF DIABETES.*

In the *Indian Medical Gazette* for March, 1894, FERMIE writes that in treating diabetes it ought to be borne in mind that a dietetic treatment of an appropriate kind is most important, more especially in middle-aged people, and this bears out the rule of Prout, who laid it down long ago that "diet is the first and chief point to be attended to."

The diet ought to be so regulated as to prevent sugar being formed from the food, so that all sugar-forming food must be prohibited. This prohibition should be gradual and not abrupt. Its place, however, must be supplemented by assimilable oil or fat food, such as cream, cod-liver oil, butter, cheese, fat bacon, ham, and meat to any quantity, except liver.

Too much milk should not be allowed, nor should pastry, potatoes, beet-root, puddings, and farinaceous substances be allowed at all. The highly-advertised diabetic foods, if really prepared, as stated, without starch, will be very beneficial, and will supply a want long felt in filling up the gaps made by the prohibition of articles of food which long use has made almost indispensable, and renders the patient less discontented with the task set before

him and more amenable to treatment. The gluten and almond biscuits prepared for the victims of diabetes are so pleasant to the taste that invalids require no encouragement to use them. Diabetic food may also be sweetened with saccharin tabloids.

It is necessary to regulate the drink as well as the food of diabetic patients. Water should only be drunk in moderation, while chocolate, sweet ales, cider, and all sweet and sparkling wines should be forbidden; in fact, it is inadvisable to take alcohol in any form.

So far as drug treatment goes, there is none which may be termed consistently satisfactory. Codeine certainly, in combination with a strict diet, has a beneficial result. It may be given in  $\frac{1}{4}$ - or  $\frac{1}{2}$ -grain doses three times a day at first, then less frequently. Dr. Mitchell Bruce thinks that opium or its derivatives should not be used until the full effect of a strict diet has been tried; but clinical experience goes to show that codeine can and ought to be given coincident with a strict diet; one acts as an adjuvant of the other and hastens the process of cure. Professor Fraser thinks that morphine is more effective in some cases than codeine.

Salicylate of sodium is regarded with favor by some, especially in those cases where opium is contraindicated.

In treating diabetic coma, early and thorough purging with a large dose of calomel is about the best, followed by stimulants and doses of potass. acetat with digitalis every hour at first and then less frequently.

*THE MODERN TREATMENT OF DIPHTHERIA.*

FISCHER, of New York, contributes the following conclusions to the *Post-Graduate* for April, 1894:

1. Local disinfection,—careful distinct nasal antisepsis by means of naso-pharyngeal irrigation; this can be done by irrigating with warm salt water (1 drachm to the pint); the addition of bichloride of mercury (1 grain to the pint), or of borax (1 to 2 drachms), or acid salicylic (4 grains to the pint), is regarded as an improvement by some. It should be thrown with enough force to flow out the other nostril and partly by the throat. Tearing the membrane or using force will cause epistaxis, and is not advisable. Jacobi says, in his treatise on diphtheria (p. 208), "When they see benzoate of sodium destroying bacteria in a glass vessel, they take it for granted that the human system will permit of the same action as a glass vessel. Thus, benzoate of

sodium is sent into the stomach or into a pulmonary artery under orders to do the same as it does in the laboratory. The drug has in consequence had a short life after having been extolled in a very limited time by microscopists, etc." Jacobi concludes by saying that as an antidiphtheritic or antipyretic it utterly failed.

Frequent applications of pepsin, trypsin, or papayotin with a medicine-dropper may be indicated in some abstract cases. Naso-pharyngeal irrigation will cause the neighboring enlarged glands to become reduced in size quicker than all other treatment combined.

2. Sponging with peroxide of hydrogen hourly.

3. Internal administration of stimulant drugs, —ferric chloride for tonic effect. Alcohol, no matter at what stage, is indicated in all cases of septicæmia, be they diphtheritic or not.

4. Liquid diet,—milk, beef-tea, milk-punch; rectal feeding, if necessary.

5. Local applications of cotton swabs, moistened with bichloride (1 to 1000 to 1 to 500), applied with great pressure every two hours, as an abortive plan of treatment, if the case is seen early.

6. Antipyretics. If at all useful, salicylate of sodium is the best, in doses of 2 to 15 grains every hour or more, according to the age and tolerance of the patient. If the drug is not well borne, then antipyrin or antifebrin may be given.

The temperature in uncomplicated cases of diphtheria has given little trouble, except when complicated by scarlatina.

Cold applications—cracked ice and ice-cream—are very grateful to patients. Calomel, to empty the bowels and reduce the temperature, is a mercurial salt, besides being a valuable intestinal antiseptic. Orange- and lemon-juice are also highly beneficial.

The complications and their management must be considered in each case. So must the question of both intubation and tracheotomy, to which the author only refers. Every case must be studied, and the treatment based on the previous habits, the general condition, the severity of the attack, and the amount of the infection.

#### TREATMENT OF CHOREA.

In giving his views as to the treatment of chorea, DR. DUJARDIN-BEAUMETZ (*Bull. Gén. de Thér.*, March 15, 1894) first distinguishes between chronic chorea, which he points out as incurable, and acute chorea, or "chorée de Sydenham." The most common cause of the

latter is usually said to be rheumatism, but he thinks at the present time that the greater proportion of cases are of nervous or hysterical origin. The rheumatic and nervous influences often coexist in the same patient. He also points out that while in some inco-ordination is the leading phenomenon, in others loss of motor power is the most marked feature.

In chorea owning a rheumatic origin salicylate of sodium often fails. Antipyrin is the best remedy. Of this, 15 grains may be given four times daily. He has tried exalgine in doses of 45 grains daily, but without success, though Dana and Loewenthal, giving larger quantities (60 to 100 grains daily), have reported it useful.

Cure by antipyrin takes fifteen to twenty days to accomplish. In severe cases it is necessary to give hypnotics, and chloral is the best, the more so as it is well borne in large doses by children; as much as 45 to 60 grains daily may be given to infants.

If, on careful examination, no cardiac disease is present, the cold douches may be employed, or ether spray along the spinal column. In the period of the decline of the attack, massage and gymnastics are useful.

In chorea of hysterical origin the treatment should be quite different. Young girls of from twelve to fifteen are mostly attacked with this form of chorea, and other indications of hysteria, such as anæsthesia, are often present. Bromide of potassium, in doses of 30 to 60 grains daily, is here the best remedy, and arsenic may be given at the same time. Hydrotherapeutic treatment should be employed; the cold douche to the vertebral column, followed by a warm douche upon the lower extremities, is a good form. If there be much nervous excitation, the douche should be tepid. In very severe chorea of this kind the cold wet sheet should be used for ten or fifteen seconds, after which the patient should be surrounded by hot coverings; ether spray along the spinal column may be employed when other means cannot be adopted or when the patient supports the wet sheet badly. Massage as gymnastics may be employed here as in other forms of chorea. In that form of chorea in which muscular weakness is the most marked feature the bromide is not advisable; the cold wet sheet is the best means of treatment. With regard to other means that are employed, Dujardin-Beaumetz expressed himself as opposed to powerful drugs, such as strychnine, curare, etc. Choreia, he says, tends to get well itself, and it is not wise to interfere too actively.—*Medical Chronicle*, April, 1894.

*VERATRUM VIRIDE AS A REMEDY IN PUERPERAL ECLAMPSIA.*

DAVIS records the results of the use of veratrum viride during twenty years' practice, in the *Virginia Medical Monthly* for April, 1894.

The author's object in writing is to show that veratrum viride will control puerperal convulsions when administered in large doses, and that it is perfectly safe to administer it in sufficient quantities to control any case of convulsions, and he has reported a few cases to prove that his remarks are based not only upon a theory, but upon actual experience.

In conclusion, he states that he has used the tincture of veratrum viride successfully in the treatment of every form of convulsion except traumatic tetanic convulsions, and he does not hesitate to use it in conjunction with other remedies in such a case whenever he has an opportunity, with the hope of relief.

He claims to have used veratrum viride in larger doses than it was generally known that it could be used at the time he commenced to use it in the treatment of convulsions. He had never seen it recommended in such quantities (20 to 60 drops), and hence used it on his own responsibility. His experience convinces him that it is both safe and efficient in the treatment of convulsions.

*GUAIACOL AS AN ANTIPYRETIC.*

FRIEDENWALD and HAYDEN report a series of cases in which they have used guaiacol for this purpose. They think they are justified in concluding,—

1. That this drug has a powerful antipyretic action, occasioning a reduction of from one to four degrees of temperature in from one to four hours.

2. That in all cases this reduction of temperature is accompanied by profuse diaphoresis, which may or may not be accompanied by a chill or chilly sensation.

3. That great exhaustion is frequently produced.

4. That the effects may be obtained from comparatively small doses (from 30 to 50 drops), and that great care should, therefore, be exercised in the use of the drug. The drug should be applied but once or twice daily, and the initial dose should not be above 30 drops.

5. That the effect produced by guaiacol, though more powerful, is the same as is obtained from most of the other antipyretics of the coal-tar series, and that the same care must, therefore, be exercised as with the other

preparations. Its effect differs widely from the stimulating cold bath in being depressant.

6. That the main indication for its use is in diseases accompanied by high fever in which the cold bath cannot be applied. It may, therefore, be especially useful in typhoid fever as well as in all other diseases accompanied by high fever in which irritability of the stomach prevents the use of other antipyretics.

*TREATMENT OF TUBERCULAR PERITONITIS.*

DR. CARL BECK, of New York, read a paper with this title before the Eleventh International Medical Congress, the conclusions of which were as follows:

1. A diagnosis of tubercular peritonitis in the early stages is possible only in exceptional cases.

2. The injection of an iodoform-glycerin mixture (1 to 10) into the abdominal cavity has a specific antitubercular action.

3. As this treatment is useful in other peritonic troubles, it is particularly indicated in all doubtful cases.

4. The employment of iodoform in powder or solution is indicated after laparotomy whenever it is desired to limit secretion.

5. The absorption of the products of streptococci appears to be made less virulent in its results by the coabsorption of iodoform.

Of five cases of general peritonitis treated in this way, only one resulted fatally.

*ADMINISTRATION OF ANÆSTHETICS CLINICALLY CONSIDERED.*

WHITE (*Medical Press and Circular*, March 14, 1894) ends a paper with the above title as follows:

We should as a preliminary step endeavor by every possible means to encourage a patient in the prospect of an operation, to remove any undue fear, and to render him tranquil at the time of administration.

For three or four hours before the use of an anæsthetic no food should be taken, unless it be a few spoonfuls of liquid nourishment, or vomiting, with its ill consequences, is almost sure to take place.

The patient should always, if possible, be placed in a horizontal posture. All tight clothing should be carefully set free or removed, and the neck and chest of the patient relieved of the slightest pressure. The undivided attention of the anæsthetist should be

given to the patient during the whole period of administration.

The patient should be kept as quiet and cheerful as possible when inhalation is begun. There should be no noise about him, and he should never be spoken to or disturbed until sleep takes place.

Inhalation should be commenced very gradually, beginning with a free admixture of atmospheric air, and the proportion of anæsthetic vapor slowly increased.

If struggling occurs, we should admit more air or remove the inhaler. When struggling subsides, we should gradually resume the anæsthetic and endeavor to maintain regular breathing until the conjunctiva begins to be insensible; then the pupil oscillates between dilatation and contraction and the eyeball slowly rolls in its orbit.

The eyeball then becomes fixed; the conjunctival reflex becomes more and more feeble and then disappears. The pupil will now be found to be fully contracted and the condition of *sleep* is attained.

This condition of sleep can be kept up for a considerable time. As soon as there is full contraction of the pupil the inhaler should be removed, and gently reapplied if the pupillary contraction passes off and the eye begins to move. This renewed movement of the eyeball and diminishing contraction of the pupil invariably usher in returning consciousness.

The movements of the pupil and of the eyeball and the conjunctival insensibility *pass off in an inverse order to that of their accession*, and afford the most accurate guide for any necessary renewal of the anæsthetic.

An operation should never be commenced until this condition of sleep is reached. The slightest disturbance of a patient, either by noise, or by a slight puncture, or by movement, will so rouse him as to render him dreamy and excited, and will generally produce a depressing action both on the respiration and the pulse.

If stertorous breathing should occur, with fixed eye and dilated pupil, inhalation should immediately be stopped.

We should never, unless necessary, attempt to rouse a patient suddenly from his sleep by slapping, etc. The free admission of air to the apartment and to the face and cheek of the patient, and, if necessary, gentle application of ammonia to the nostrils, are the best restoratives in ordinary cases of *excessive* anæsthesia. And, lastly, we should most carefully watch the state of respiration and pulse and the condition of the pupil and aspect of the

countenance during the whole period of inhalation; and if the respiration or pulse fail, we should have immediate recourse to artificial respiration, free admission of air, and application of ammonia to the nostrils, and, if necessary, we should gently but regularly maintain artificial respiration for at least half an hour.

White believes that there is, as stated by the chloroform committee of the Royal Medical and Chirurgical Society, a considerable advantage in the use of mixtures of ether and chloroform over that of chloroform alone.

For many years he has employed the A. C. E. mixture almost exclusively, and has given it in nearly fifteen hundred cases. It is certainly less depressing than chloroform and not appreciably more irritating to the pulmonary mucous membrane. He has so far never seen any but the most favorable results from its use, and believes it is decidedly more free from danger than chloroform by itself.

#### THE DIGESTIVE ACTION OF PAPAIN AND PEPSIN COMPARED.

As a result of some experiments with papain and pepsin, as to their solvent and peptonizing action on egg albumin, DOTT (*Pharmaceutical Journal and Transactions*, March 10, 1894) notes the following:

1. One hundred grains of albumin, freshly boiled and sifted, digested in one ounce of water, with ten minims of dilute hydrochloric acid, at a temperature of 98° to 100° F., with two grains of pepsin. Solution was nearly complete in an hour. After four hours, one drachm of nitric acid, diluted with three drachms of water, was added; the precipitate, collected, washed, pressed gently in blotting-paper, and weighed in the moist state, equalled ten grains.

2. The same experiment in all respects, except that seven grains of papain were used. The nitric acid precipitate (including undissolved albumin) equalled one hundred and three grains.

3. One hundred grains of egg albumin, with one ounce of water, fifteen minims of dilute hydrochloric acid, digested at 130° F., with two grains of pepsin. Solution was nearly complete in fifteen minutes. After two and a half hours the practically clear solution was mixed with thirty minims of nitric acid, diluted with two drachms of water. The precipitate, collected and weighed, as above noted, equalled two and a half grains.

4. The same experiment in all respects, except that two grains of papain were used.

After two and a half hours the albumin was not nearly dissolved. It was collected and weighed in the moist state, equalling seventy grains. The filtrate from this precipitate was then mixed with nitric acid, as above described; precipitate collected, etc., equalled thirty-three grains.

From these experiments it is evident that papain has only a slight solvent action on albumin at the temperature of the body, and practically no peptonizing action. On the other hand, pepsin has a high power both of dissolving albumin and peptonizing the solutions. The higher temperature of 130° F. (as in the British Pharmacopœia's test for pepsin) increased the rapidity both of the solvent and peptonizing power of pepsin, and likewise increases the solvent power of the papain.

Certain assumptions are made: first, that the pepsin and papain of two well-known makers are what they are represented to be; second, that non-precipitation by nitric acid is a trustworthy indication of the formation of peptone.

#### PREScriptions.

Useful in painful dyspepsia:

℞ Bismuthi subnitrat., gr. x;  
Magnes. carbonat., gr. xv;  
Liq. potassæ, ℥x;  
Acid. hydrocyan., dil., ℥iii;  
Tinct. zingiberis, ℥v;  
Aq. menth. pip., q. s. ad ℥i. M.

For one dose. To be repeated two of three times daily. Shake well.

A cardiac stimulant:

℞ Tinct. strophanthi, ℥xl;  
Tinct. zingiberis, ℥i;  
Syr. simplicis, ℥iss;  
Aque chloroformi, q. s. ad ℥viii. M.  
2 tablespoonfuls three times a day.

An application for eczema:

℞ Ol. amygdalæ dulc.,  
Glycerini, of each, ℥iii;  
Zinci oxidi, ℥iss. M.

A good nutrient enema:

℞ Egg, one;  
Fresh milk, ℥iv;  
Pancreatic solution, ℥ii;  
Sodium bicarbonate, gr. xx;  
Hot water, ℥ii.

Switch the egg and milk thoroughly together, add the pancreatic solution and bicarbonate of sodium, then the hot water, and let stand in a warm place for half an hour. A little brandy or wine may be added, if desired. The addition of a few drops of laudanum frequently assists in the retention of the enema.

Caustic for nævi, tuberculous growths, etc.:

℞ Sodii ethylatis, ℥i;  
Alcohol, ℥i. M.  
Apply with care.

The following will be found useful in promoting the contraction of fistulous tracts:

℞ Camphoræ, ℥i;  
Salolis, ℥ss;  
Etheris, ℥i. M.

For uterine hemorrhage:

℞ Ext. cannabis indicæ fl., ℥viii;  
Ext. ergotæ fl., ℥i;  
Ext. hamamelis fl., ℥ss;  
Tinct. cinnamomi, ℥ss;  
Aq., ad ℥iii. M.  
2 tablespoonfuls every three hours.

—*Medical Press and Circular*, March 7, 1894.

#### PRESCRIPTIONS AND PRACTICAL NOTES.

Alopecia:

Oil of cinnamon, ℥iiss;  
Sulphuric ether, ℥i.  
Paint twice a day.

Acute tonsillitis:

Crystallized carbolic acid,  
Camphor, of each, gr. xv;  
Dist. water,  
Glycerin, of each, ℥ii.  
Paint on the tonsils.

Anæsthetic, local:

Chloroform, ℥i;  
Ether, ℥vi;  
Menthol, gr. xxx.  
To be applied by a spray.

*Bensonaphthol*.—In bowel- and stomach-troubles of children this substance should be exhibited five times a day, according to the following total daily dosage:

Age.	Grains.
0 to 6 months.....	3 to 7½
7 to 12 months.....	9 to 12
1 to 3 years.....	13
4 to 7 years.....	22½
8 to 14 years.....	30

Tuberculous bronchitis:

Creosote, ℥ss;  
Tinct. of cinchona, ℥i;  
Pure chloroform, ℥ss;  
Malaga wine, q. s. ad ℥iv.

A teaspoonful three times a day before meals.

Burns:

Olive oil, ℥ii;  
Salol, ℥iii;  
Lime-water, ℥ii.

## Conjunctivitis (granular) :

Mercuric oxide, gr. iii;  
Zinc oxide,  
Thymol,  
Muriate of cocaine, of each, gr. iss;  
Camphor, gr. ss;  
Vaseline;  $\mathfrak{z}$ i.

*Erysipelas*.—Dr. H. Koster covers the affected part and its immediate neighborhood with a moderately thick layer of vaseline, over which is placed a piece of linen and a gauze binder. The dressing is applied twice a day.

## Emmenagogue :

Oxalic acid, gr. xx;  
Glycerin,  $\mathfrak{z}$ iss;  
Syrup of orange-flowers,  $\mathfrak{f}\mathfrak{z}$ ii;  
Distill. water enough to make  $\mathfrak{f}\mathfrak{z}$ xii.  
Dose.—2 ounces every hour.

## Gonorrhœa :

Antipyrin, gr. xxx;  
Corrosive sublimate, gr. ss;  
Water to make  $\mathfrak{f}\mathfrak{z}$ viii.  
Injection.

## Gonorrhœa (chronic) :

Tannin,  
Iodoform, of each, gr. xxx;  
Glycerin,  $\mathfrak{z}$ i;  
Rose-water,  $\mathfrak{z}$ iv.  
Injection.

## Hæmoptysis :

Gallic acid,  
Ergotin, of each, gr. xv;  
Distilled water,  
Syrup of marshmallow, of each,  $\mathfrak{z}$ i.  
Dose.—1 ounce every two hours.

## Hemorrhoids.—(a) Ointments :

1. Cold cream,  $\mathfrak{z}$ ss;  
Tannin, gr. xxx;  
Extract of opium, gr. iii.
2. Lard,  $\mathfrak{z}$ i;  
Goulard's cerate,  $\mathfrak{z}$ ii;  
Antipyrin, gr. xlv;  
Extract of belladonna,  
Extract of opium, of each, gr. xv.
3. Cacao-butter,  $\mathfrak{z}$ iii;  
Milk of almonds,  $\mathfrak{z}$ ii;  
Extract of hamamelis, gr. iii.
4. Vaseline,  $\mathfrak{z}$ i;  
Tannin, gr. xx;  
Muriate of cocaine, gr. xv;  
Sulphate of morphine, gr. iv;  
Sulphate of atropine, gr. iii.
5. Aristol, gr. xxx;  
Balsam of Peru,  $\mathfrak{z}$ i;  
Simple ointment,  $\mathfrak{z}$ i.

## (b) Suppositories :

1. Aristol,  $\mathfrak{z}$ i;  
Extract of opium, gr. ii;  
Extract of belladonna, gr. ii;  
Muriate of quinine, gr. xv;  
Cacao butter,  
White wax, of each, a sufficiency to make six suppositories.
2. Lard, gr. xxx;  
Extract of hyoscyamus,  
Extract of conium, of each, gr. ii;  
Cacao butter, a sufficiency for one suppository.
3. Chrysarobin, gr. i;  
Iodoform, gr. iii;  
Extract of belladonna, gr.  $\mathfrak{x}$ lv;  
Cacao butter, a sufficiency for one suppository.

## Iodoform powder (antiseptic and non-irritant) :

Powdered iodoform,  $\mathfrak{z}$ ii;  
Salicylic acid (powdered),  
Subnitrate of bismuth, of each,  $\mathfrak{z}$ vi;  
Camphor,  $\mathfrak{z}$ iss.

## Megrim :

Phenacetin, gr. xlv;  
Caffein sodio-salicylate, gr. iii;  
Muriate of quinine, gr. x;  
Saccharin, gr.  $\mathfrak{x}$ lv.  
Divide into ten powders.  
Dose.—1 powder every two hours.

## Tænia :

Chloroform,  $\mathfrak{z}$ i;  
Croton oil, gtt. i;  
Glycerin,  $\mathfrak{z}$ i.  
For one dose.

## Sickness (pregnancy) :

1. Bromide of strontium, gr. xx.  
Twice a day before meals.
2. Menthol, gr. xv;  
Alcohol,  
Simple syrup, of each,  $\mathfrak{z}$ i.  
A teaspoonful every hour.

## Sweats (night-, in phthisis) :

Salicylic acid,  $\mathfrak{z}$ ss;  
Distilled water,  $\mathfrak{z}$ iiss;  
Alcohol,  $\mathfrak{z}$ iss;  
Glycerin,  $\mathfrak{z}$ i.

Dose.—30 minims subcutaneously for four or five consecutive evenings.

## Ulcers (syphilitic) :

Calomel,  
Oxide of zinc, of each, gr. xv;  
Vaseline,  $\mathfrak{z}$ vi.

## PRESCRIPTIONS.

For chronic lead-poisoning :

- ℞ Magnesii sulphatis, ℥ss;  
 Potassii iodidi, ℥i;  
 Sodii sulphatis, ℥ii;  
 Syrupi aurantii, f℥ss;  
 Aquæ menthæ piperitæ, q. s. ad f℥viii.  
 Misce et fiat mistura.  
 2 tablespoonfuls three times daily.

For the green diarrhœa of infants :

- ℞ Acidi lactici diluti, ℥iv;  
 Tincturæ limonis, ℥i;  
 Syrupi simplicis,  
 Aquæ, of each, ℥ii. M.

A teaspoonful thrice daily after suckling.

A confection for gonorrhœa :

- ℞ Potassii bicarbonatis,  
 Potassii nitratis, of each, gr. v;  
 Pulveris cubebæ, gr. xxx;  
 Olei santali, ℥xx.  
 Fiat confectio.

A gargle for simple tonsillitis :

- ℞ Sodii biboratis, ℥iss;  
 Tincturæ benzoini, ℥iiss;  
 Aquæ rosæ, q. s. ad ℥viii.  
 Fiat gargarisma.  
 To be used frequently.

For commencing infantile broncho-pneumonia :

- ℞ Ammonii acetatis, gr. viiss;  
 Tincturæ aconiti, ℥xv;  
 Syrupi codeinæ (Pharm. Gall.), ℥ii;  
 Aquæ, ad ℥ii.  
 Fiat mistura.

A teaspoonful hourly till the dyspnoea is relieved.

—*Practitioner*, April, 1894.

## PRESCRIPTIONS.

Local dressings for burns :

1. ℞ Cocainæ hydrochlor., 1 part;  
 Acid. carbolic, 2 parts;  
 Acid. borici, 10 parts;  
 Glycerini, 17 parts;  
 Aq. destill., 70 parts. M.
2. ℞ Acid. borici, 4 parts;  
 Iodoformi, 2 parts. M.
3. ℞ Acid. borici, 3 parts;  
 Iodoformi, 2 parts;  
 Aristol, 1 part. M.

For laryngismus stridulus :

- ℞ Chloral. hydratis, ℥ss;  
 Pot. bromidi, ℥ii;  
 Syr. tolutani, ℥iiss. M.  
 A teaspoonful every half-hour.

Useful in general infantile eczema :

- ℞ Hydrarg. ammoniati, gr. x;  
 Acid. carbolic, gr. viii;  
 Ol. olivæ, ℥ss;  
 Ung. petrolei,  
 Ung. zinci oxidi, of each, ℥ss. M.  
 Apply two or three times daily.

For cancer of the cervix uteri :

- ℞ Iodoformi, gr. xv;  
 Extracti opii, gr. viii;  
 Essentiæ bergamottæ, ℥x.  
 Ol. theobrom., ℥iiss. M.

To make twelve suppositories; 1 to be introduced into the vagina when necessary.

For alopecia :

- ℞ Quinina sulphatis, gr. xl;  
 Tinct. cantharidis, ℥i;  
 Sp. ammon. aromatici, ℥i;  
 Ol. ricini, ℥iiss;  
 Ol. rosmarini, ℥vii;  
 Sp. vini rect., ℥v.

Shake well before applying once a day.

Chlorosis from menorrhagia :

- ℞ Sulphate of iron, gr. c;  
 Ext. hydrastis canadensis, gr. c;  
 Ext. hyoscyamus, gr. l.

Divide into one hundred pills; 2 to be taken at each meal.

—*Medical Press and Circular*, April 18, 1894.

## APHRODISIAC TREATMENT IN WOMEN.

LUTAUD points out in the *Journal de Médecine de Paris* for March 18, 1894, that patients frequently present themselves needing stimulant sexual treatment. Aside from general hygienic recommendations, the following methods may be carried out :

- ℞ Extract of nux vomica,  
 Extract of cannabis indica, of each, gr. xv;  
 Aqueous extract of aloes, gr. iii.  
 Make into fifty pills; take 1 after meals.

If phosphorus is indicated, the following may be used :

- ℞ Phosphorus, gr. ss;  
 Bisulphide of carbon, gtt. xx;  
 Sweet oil of almonds, ℥vi;  
 Magnesia, a sufficient quantity.

Make into fifty pills and coat with gelatin; 1 or 2 may be taken with meals.

Small doses of opium, say  $\frac{1}{4}$  grain of the extract, one hour before retiring at night, are sometimes recommended. In other instances, unless there is danger of producing the habit, cocaine may be employed. Where the trou<sup>1,1a</sup>

lies in hyperæsthesia, local treatment may be necessary, either operative or anæsthetic. In many instances hydrotherapy is exceedingly useful.

In the way of diet, fish, shell-fish, condiments and vanilla, and similar substances are useful. Electricity is of comparatively little value.

#### THE TREATMENT OF TYPHOID FEVER IN CHILDREN.

In the *Journal de Médecine de Paris* for March 18, 1894, there was an article upon this subject, in which the following treatment is recommended. At the onset of the attack, when the diagnosis is still uncertain and resembles in some respects the fever due to gastric disorder, it is well to administer small doses of calomel with a little milk sugar, and to give a rectal injection of an infusion of chamomile in boiled water, with four per cent. of boric acid, morning and night. Internally, to give from a coffee- to a dessertspoonful every two hours of the following prescription :

R Benzonaphthol, gr. xiii to gr. xxx;  
Syrup of peppermint, ℥i;  
Syrup, ℥iv.

In the way of nourishment, the patient may be given every two hours a very small cup of milk, to which may be added as a stimulant a little coffee, tea, cognac, or a very slight flavoring with vanilla or chocolate. In cases where the diagnosis is thoroughly assured after the calomel has acted, it is well to prescribe citrate of magnesium to move the bowels and large rectal injections morning and night of a borated solution already named ; or,

R Naphthol, gr. iii;  
Boiled water, Oii.

To be used in four equal quantities.

Internally, an antiseptic dose, composed as follows, is useful :

R Benzonaphthol, gr. xv to gr. xxx;  
Salicylate of magnesium, ℥ss to ℥i;  
Syrup of peppermint, ℥vi.  
Simple syrup, ℥iv.

If there is a bitter taste, it is well to replace the salicylate of magnesium by the salicylate of bismuth. Of this mixture, give a teaspoonful every two hours, and morning and night administer a capsule or cachet containing 2 to 4 grains of the hydrochlorate of quinine, or else give the same dose by injection or suppositories. If the headache is severe, replace the quinine by antipyrin ; spongings with tepid water may be

resorted to, and care should be taken, by the use of a boric-acid mouth-wash, to keep the mouth clean. If the fever is of great intensity, the same treatment, with the addition of constant spongings with cooler water, is to be followed, and should the nervous disturbance be very great, small doses of coffee or of chloral may be used, but antipyrin is not to be employed. In grave cases the baths are given even more frequently, as often as is necessary to keep the temperature down. For the nervous agitation the following mixture may be prescribed :

R Hydrate of chloral, gr. vi to gr. xv;  
Tincture of musk, gtt. xx to gtt. xl;  
Syrup of orange, ℥i;  
Water, ℥iii.

Cold compresses are to be applied to the head, if there is delirium. In cases showing marked adynamia, the cold should be applied to the head and the following mixture given :

R Hoffmann's anodyne, gtt. x to gtt. xv;  
Malaga wine, ℥i;  
Syrup of mint, ℥i;  
Water, ℥iii.

A teaspoonful to a tablespoonful every hour.

In cases of typhoid fever in which there seems to be great cardiac depression, the pulse being feeble and showing evidences of collapse, it is well to use the following injection hypodermically morning and night :

R Caffeine, gr. xxx;  
Benzoate of sodium, gr. xlv;  
Distilled water, enough to make ℥i.  
10 to 20 minims of this may be used.

Where complications such as bronchitis, broncho-pneumonia, etc., arise, the same treatment is to be continued as that just given, but the cold spongings are to be stopped and a cotton jacket is to be applied to the chest. Morning and night a mustard sinapism should be applied to the chest and the stimulating treatment already indicated employed.

During the period of convalescence the baths are diminished as the temperature approaches the normal. Soups, broths, and thoroughly softly cooked meats and pulpy vegetables are allowed, and the following tonic mixture given in the dose of a dessertspoonful three times a day :

R Tincture of gentian,  
Tincture of cinchona, of each, ℥v;  
Fluid extract of kola, ℥lxxv.

Champagne also is sometimes useful if it agrees with the patient. Should hemorrhage from the intestine complicate the case, absolute



rest, with local application of cold, is to be resorted to. Small doses of opium may be administered by the mouth, and every two to three hours 2 or 3 drops of perchloride of iron are to be employed. Ice compresses should be applied over the belly. Where there is danger of sloughs and abscesses, it is well to wash the part with a four-per-cent. solution of boric acid, and afterwards apply iodoform or salol. Abscesses, of course, should be opened, drained, and irrigated with mild antiseptic solutions. For the prophylaxis of typhoid fever, the discharges of the patient should be received in a five-per-cent. solution of sulphate of copper or in a 1 to 1000 solution of bichloride of mercury. The milk which is taken by the patient should be carefully sterilized, and after the case recovers careful disinfection of all the vessels used by the patient should be carried out.

#### WARM BATHS.

The *Medical Press and Circular*, April 25, 1894, states that Wick read a paper on the effects of warm baths on the temperature. He said the specific heat of the body was reduced when the bath was between 31° and 34° C., but the reduction was not parallel with the time or temperature of the bath. The pulse was increased when the temperature of the bath rose to 37° C., but was unaffected between 34.8° and 36.4° C. The specific heat is increased during the first half-hour, but gradually becomes less thereafter. The amount of direct heat depends a good deal on the conductivity of the tissues, as proved by experiments on the dead body, which shows that the heating is in the ratio of geometrical progression. The true heating agent in the body is through the circulation.

There are other factors, as radiation, conduction, and evaporation, which he maintains to be most important, as in breathing, perspiration, etc. The latter is adapted for the packing treatment as the perspiration is abstracted from the blood. All these conditions must be accepted as arbitrary, as the body will soon accommodate itself to the treatment by warm baths, and fail to act either by evaporation, radiation, or conduction.

It may be approximately stated that the pulse is increased ten beats per minute by increasing the temperature to 40° C., while the skin is greatly reddened.

Another point of investigation was the effect on the metabolism of the body. The body-weight begins to decrease after commencing the warm-water treatment, falling 350 to 500

grammes; after which it begins to increase if treatment be continued, till the body has reached 500 to 600 grammes more than it weighed at the commencement. The loss is greatest at the commencement of the treatment, and is more rapid than the increase. The nervous system is in no way irritated by the treatment. The quality of the pulse, measured by the sphygmograph, shows no weakening of the arteries, as is generally assumed, the hæmoglobin is increased, the blood is not subsequently thickened, the leucocytes are increased, the breathing is longer and deeper, and the sensation of the skin is soon restored.

#### TREATMENT OF TRAUMATIC EPILEPSY.

DARBY, in the *Virginia Medical Monthly* for May, 1894, states that the only remedies to be relied on in the treatment of traumatic epilepsy is the trephine in depressed fractures and the scalpel in other traumatisms which may produce reflex irritation of this character, and when the bone is removed in fractures, the dura should be opened, and if the cortex of the brain shows signs of injury, it should be carefully cut away and the wound stitched with catgut and closed antiseptically. When the bone is not cut away in small bits, it may be replaced in the opening and expected to cause no trouble, provided the button is not thicker than the surrounding bone. Prevention is better than cure, and it should be the purpose of the surgeon to prevent these phenomena by operation in all cases of depressed fracture as soon as he sees them, as the operation is more simple at that time, and if a button of bone has to be removed, he can usually select the locality for his trephine, and thus keep away from dangerous areas, such as the meningeal arteries and sinuses, as well as preventing strong adhesions of the dura and the development of epilepsy. After surgical operations for this disease, the patient should be kept on medical treatment for at least two years to prevent a return of the trouble. It is in this class of cases that we may reasonably expect good results. Bromide of potassium, in full doses, has given the best results, but of late a solution of bromide of gold and arsenic, given in 5- to 10-drop doses, has given very satisfactory results. The patient should, if possible, be induced to live a temperate and systematic life, sleeping regularly, eating moderately, and keeping his digestive and excretory organs in a healthy condition. Especially is it necessary for him to abstain from the excessive use of tobacco and alcoholic stimulants.

*OPHTHALMIA NEONATORUM.*

AUGUSTUS P. CLARKE (*Journal of the American Medical Association*, April 28, 1894) considers one of the most important indications in the treatment of ophthalmia neonatorum the removal, at short but regular intervals, of the purulent secretion, either by syringing or by prolonged irrigation through some of the well-recognized varieties of irrigators. Great care should be taken that no violence is done to the epithelium or to the soft structures.

Various solutions are discussed, and, in addition to the regulation treatment, he has occasionally found benefit from the following prescription :

Bichloride of mercury, gr. i;  
Ammonium chloride, gr. vi;  
Water, ℥xvi.

In his experience he has occasionally had good results with mild chloride of mercury dusted between the eyelids after the eyes have been cleansed. He has also used iodoform in the same way. Panas's solution is likewise recommended, according to the following formula :

Binioidide of mercury, 1 part;  
Absolute alcohol, 400 parts;  
Distilled water, reesterilized, 20,000 parts.

*THE DISINFECTION OF THE CONJUNCTIVAL CUL-DE-SAC.*

LAGRANGE (abstract in the *Annales d'Oculistique*, March, 1894, p. 237) thinks that, before opening the anterior chamber, it is absolutely necessary that the conjunctiva, and especially the superior cul-de-sac, should be thoroughly cleansed. In order to accomplish this, he has had the handle of a Desmarres elevator hollowed, to the upper part of which is attached an india-rubber tube, which is, in turn, in connection with a receiver containing an antiseptic liquid. In raising the receiver the liquid runs through the handle and through several holes at the outlet. He passes about a litre of sublimate solution (1 to 4000) into the eye which is to be operated upon. This irrigation is of great service in the treatment of purulent ophthalmia, where it not only dislodges the pus, but lessens the virulence of the cocci.

*OPHTHALMIA NEONATORUM.*

HIRAM WOODS (*Annals of Ophthalmology and Otology*, April, 1894) discusses certain causes of failure in the treatment of ophthalmia neonatorum, one of which he believes is rough handling of the affected eyes, especially by

ignorant attendants. He calls attention to the fact that nitrate of silver is often injudiciously and wrongly used, and is responsible for opacity of the cornea. According to Dr. Woods, the clinical condition demanding the non-use or discontinuance of silver is conjunctival purulency, unaccompanied by swelling or tension of the lids characteristic of infiltration, and without papillary swelling of the conjunctiva, or much of it, on the upper lid, and the deep-red color seen in the conjunctiva in severe cases. He insists upon the fact that mere purulency of the conjunctiva does not necessarily demand nitrate of silver, but that the appearances of the lids and conjunctiva must decide its use. He very properly protests against the practice of instilling cocaine to relieve the pain of ophthalmia neonatorum.

*IRIDECTOMY IN THE TREATMENT OF ULCERS AND ABSCESES OF THE CORNEA.*

BETTREMIUX (abstract in the *Annales d'Oculistique*, March, 1894) believes that there is no more effectual means of arresting the alarming progress of certain ulcers or abscesses of the cornea which have resisted every medical remedy, than iridectomy. He considers the dangers of panophthalmitis after the operation as insignificant. The anterior chamber in some cases must be again evacuated after the completion of the iridectomy.

*SKIN-GRAFTING AS A THERAPEUTIC AGENT IN MALIGNANT GROWTHS.*

DR. F. B. TIFFANY (*Ophthalmic Record*, April, 1894) recommends skin-grafting after the removal of malignant growths of the eyelids and orbits, the grafts being taken from a remote part of the body of the patient himself. His method is as follows: after thorough antiseptic preparation, both of the area of operation and of the portion of the body from which the graft is to be taken, the malignant growth is removed, its bed or seat is measured, and a corresponding measurement is outlined upon the arm or chest. The graft is then cut about one-third larger than the dimensions of the cavity to be filled. It is transferred, without handling, immediately to its new abode, where it is fixed in position by a few stitches of delicate silk. The parts are covered by antiseptic gauze and isinglass plaster; collodion and iodoform are never used. The parts are dressed daily, but the grafts are not specially examined for seven or eight days.

*INTRAOCULAR THERAPEUTICS: AN EXPERIMENTAL STUDY.*

HENRY M. CHASSEAUD (*Journal of Pathology and Bacteriology*, November, 1893, and the *Ophthalmic Review*, January, 1894) has performed a number of experiments to ascertain the value of intraocular injections. He concludes from his experiments:

1. That various fluids may be introduced with safety into the posterior chamber of the eye.

2. That chlorine-water is the only substance which fulfils the necessary conditions for a useful intraocular antiseptic. Its action is efficient, and it causes apparently no inflammatory reaction.

3. In regard to the other antiseptics tested, corrosive sublimate and carbolic acid, owing to their stable compounds with albumin and the inflammatory reaction which they produce, are not so useful as some others which are less active. Tincture of iodine, camphorated naphthol, hydronaphthol, eucalyptol, and other antiseptic oils are far too violent in their action and cause disorganization of the eye. Boric acid and iodoform are weak and non-irritant antiseptics. Oxycyanide of mercury and peroxide of hydrogen are just as good antiseptics as chlorine, but the former causes opacities in the vitreous and the latter seems to bleach the pigment of the eye. Creolin is a powerful irritant, and its antiseptic action is very doubtful. Pyoktanin does not act as an antiseptic in the vitreous; it gives rise to neuritis, with subsequent degeneration and atrophy of the optic nerve.

4. The idea of causing a localized adhesion of the retina to the choroid by inducing a moderate degree of inflammation in the former has not been very successful in practice. Slight degrees of retinitis can easily be produced; they are usually accompanied by a subretinal effusion. When this effusion becomes absorbed, adhesion between the retina and choroid never ensues in rabbits. In severe forms of retinitis caused by powerful irritants, we certainly get adhesion of the retina to the choroid, but with complete disorganization of the former, extending for a considerable distance from the point of injection.

5. In all forms of inflammation of the retina the nerve-cell layer is the first affected and suffers most. The external granule layer is the last to disappear. None of the seven layers are ever reproduced when once they have been destroyed.

6. Although the *staphylococcus pyogenes aureus* was injected into the vitreous over fifty times,

in no case did sympathetic inflammation affect the opposite eye, so long as the latter had not been the seat of a recent inflammation or had not been injured subsequently.

7. It must be borne in mind that all these experiments were performed on rabbits. In these animals the regeneration of the vitreous is wonderfully rapid, and persistent glaucoma, leading to disorganization of the eye, seldom, if ever, occurs. How far these results may be applicable to man it would be difficult to say.

*THE EFFECT OF SCOPOLAMINE ON THE EYE.*

LOBASSOW (*Revue Générale d'Ophthalmologie*, March, 1894), after a series of experiments on men and rabbits, comes to the following conclusions in regard to the action of scopolamine on the eye:

1. It dilates the pupil more quickly and powerfully than atropine, and paralyzes the accommodation, the effect being less lasting than that of atropine.

2. Its use causes no complications.

3. In spasm of the accommodation scopolamine acts more powerfully than atropine.

4. It is absorbed more quickly into the anterior chamber than atropine.

5. When applied locally or in subcutaneous injections, scopolamine favors the absorption of other substances into the anterior chamber.

6. Scopolamine increases the intraocular pressure in eyes predisposed to glaucoma.

7. The antiphlogistic effect of scopolamine is less than that of atropine.

8. In cases of idiosyncrasy, scopolamine is preferable to atropine.

*THE VALUE OF WEAK LENSES.*

The relation of weak lenses for the relief of asthenopia and other complaints is thus referred to in an editorial in the *Philadelphia Polyclinic*, May 5, 1894:

This is just now being discussed among the ophthalmologists, some of them claiming that they have a positive value in preventing eye-strain, while others believe that they only act by producing a mental impression.

The fact probably is that for many persons lenses of .50 D. spherical or less, or .25 D. cylindrical, produce no appreciable improvement of vision or freedom from strain. But the question of the necessity or value of lenses must always be influenced by the individuality of the patient; and there are persons to whom

the relief afforded by such lenses is positive and unmistakable, and it may be much greater than the relief that would be given to other persons by lenses of greater strength.

Hotz, of Chicago, has reported fifty cases in which such lenses were used after other remedies had failed to give relief. He found that the treatment was reported to have been successful in sixty per cent. of the cases. But one patient reported a negative result, and the others had not been heard from.

#### THE TREATMENT OF CHRONIC SUPPURATIVE OTITIS MEDIA.

BACON (*New York Eye and Ear Infirmary Reports*) says the usual treatment employed in the simple, uncomplicated cases is syringing the ear with warm water once or several times a day, according to the quantity and character of the discharge, and the instillation of the following drops:

R Zinci sulph., gr. ii to gr. iv;  
Acid boracic, gr. x;  
Aq. destil., ℥i. M.

Other drops used were those containing sulphate of copper or acetate of lead, which should be used when the discharge is not checked by sulphate of zinc.

When small granulations are present, these should be cauterized with nitrate of silver or chromic acid fused on the end of a probe, but when they are of large size or associated with caries, they should be thoroughly removed with Blake's snare or with curettes.

For small polypi or granulations the so-called alcohol treatment, consisting in the instillation of alcohol and boracic acid (20 grains to 1 fluidounce), is very successful in some instances, while in the treatment of granulations arising from carious walls he has met with marked success in the use of alcohol and iodoform (20 grains to 1 fluidounce). With some patients it will be necessary to dilute the alcohol one-half with water, as they otherwise complain of pain after the instillation of the drops. —*Philadelphia Polyclinic*, May 5, 1894.

#### TREATMENT OF URETHRAL CARUNCLES.

LEILL (*American Journal of Obstetrics*, April, 1894) treats urethral caruncles by the use of torsion or excision. The former operation presents the advantage of giving rise to a slight hemorrhage; the latter operation gives most assurance against a recurrence, and hemorrhage

is easily checked by a temporary tamponing of the urethral canal with a conical plug of styptic cotton.

#### LIGATION OF UTERINE ARTERIES FOR MYOMATA.

ROBINSON (*American Journal of Obstetrics*, April, 1894) has treated four cases of uterine myoma by ligation of the uterine arteries; neither the tubes nor ovaries were removed. This operation avoids the shock attendant upon hysterectomy; and since the ligature includes many nerves and cuts off communication with the automatic menstruation ganglion, immediate cessation of menstruation results. The operation is followed by steady atrophy.

#### PORRO'S OPERATION FOR OSTEOMALACIA, WITH A NEW AFTER-TREATMENT.

SEELIGMANN (*American Journal of Obstetrics*, April, 1894) treated a severe case of osteomalacia by Porro's operation; the stump of the uterus was dealt with extraperitoneally. The patient made an uninterrupted recovery. While the bones were still soft extension was applied. This was begun six days after the operation and continued for eight weeks. The patient was placed upon a water-bed and counter-traction applied from above. Weights were gradually increased until ten pounds were used. As a result of this the pain soon disappeared, the body became seven inches longer, and the configuration of the pelvis was favorably affected. The kyphoscoliosis dextrans disappeared. Thus, after seven years of bedridden life, with the most severe pains and deformities, the patient regained the power of walking, and at the time of reporting was capable of performing her household duties.

#### TREATMENT OF PUNCTURED WOUNDS OF THE BRAIN.

BERGER (*La Tribune Médicale*, March 29, 1894), discussing the subject of trephining for punctured wounds of the brain, states that the first treatment should be absolute rest, and that surgical intervention should only be practised when there are distinctly localizing symptoms.

VERNEUIL also declared in favor of expectation, and mentioned four cases of penetrating gunshot wounds without mortality, none having been subject to any surgical intervention. In

one case where an effort was made to search for the bullet, the latter was found some two or three inches away from the track taken by the probe.

POZZI reported the case of a girl who, fifteen days after a gunshot wound of the temporal region, complained of almost unbearable hemi-crania. There was a small wound from which pus was discharging. This wound was enlarged by the trephine and was drained, the patient recovering.

OLLIER saw a man who had received a bullet in the ear. He recovered with facial palsy and hemiplegia. Some months later he suffered from pain distinctly limited to the posterior parietal region. He was trephined, but nothing was found. Some months later he died, and at the autopsy the ball was found behind the pharynx.

#### TREATMENT OF INGUINAL ADENITIS.

BRAULT (*Lyon Medical*, No. 10, 1894) closes an elaborate paper upon the treatment of inguinal adenitis with the statement that incision should be the method of choice in cases of acute adenitis which complicate syphilis and gonorrhœa. Chancroidal buboes should be punctured, evacuated, and injected with nitrate-of-silver solution (five per cent.).

In acute tubercular adenitis all the infected glands should be excised at once.

#### COCAINE-POISONING.

RÉCLUS (*La Tribune Médicale*, March 29, 1894) reports a case of cocaine-poisoning which occurred in the practice of a colleague from urethral injection of the drug. The patient was seventy-two years old, and had retention of urine from enlarged prostate, for the relief of which hypogastric puncture was necessary. Repeated attempts at catheterization were necessary, and finally there was injected into the urethra five drachms of a five-per-cent. solution of cocaine. Scarcely was the injection made when the patient became extremely pale, was seized with trembling, and died in a few minutes.

Réclus, in commenting upon the case, placed the whole blame on the doctor who administered a toxic dose. He holds that solutions stronger than two per cent. should not be used, and the quantity employed should always be extremely limited.

BAZY stated that since it is impossible to inject five drachms into the urethra, a portion of

the solution must have passed into the bladder and been absorbed from this viscus, while S&E advanced the very plausible theory that the solution had probably been forced into false passages.

#### TREATMENT OF TUBERCULAR JOINTS BY PASSIVE HYPERÆMIA.

MIKULICZ (*Centralblatt f. Chirurgie*, No. 12, 1894) contributes in full a number of cases treated by Bier's method of passive congestion. In some the results were satisfactory, in others the patients were not improved or even grew worse. Therefore, the author of this paper holds that the passive hyperæmia treatment is, like all other measures, applicable only to certain patients. In some the virulence of the micro-organism infection is such as to overwhelm the tissues in spite of all help. In others the tissue-resistance is sufficiently strong to bring about cure without any help. As to the third class, where the destructive action is about equalled by the normal tissue-resistance, this method may, by increasing local nutrition, bring the disease to a favorable ending.

Since it is impossible to note beforehand what the effect of the treatment will be, Mikulicz holds that in each case the patient should be carefully observed for from eight to fourteen days from the beginning of the passive hyperæmia. If during this time the symptoms increase in severity, the treatment should be abandoned. If, however, the pain grows less, there is encouragement to go on. In one case, treated continuously for many weeks but not under careful medical surveillance, atrophy of the muscles of the arm occurred. Mikulicz now combines this method with iodoform injection.

(For details of Bier's method, see THERAPEUTIC GAZETTE, January 16, 1893.)

#### TREATMENT OF APPENDICITIS.

SWAIN (*Medico-Chirurgical Journal*, March, 1894) holds that, since about ninety per cent. of cases of appendicitis recover spontaneously, early operative interference in nearly every form of appendicitis is not justifiable. Cases of simple and plastic appendicitis are to be treated by rest in bed, moderate amount of liquid diet, purgatives, rectal injection if necessary, local application of leeches or fomentations, and hypodermics of morphine for the relief of pain. As soon as pus is present operation is indicated. This may be performed

during the first week, but is more commonly required during the second. When in doubt as to the presence of pus, there is usually no great harm in delaying operation. If, however, the symptoms are steadily growing worse and the pulse becoming rapid, operation is indicated.

Section, then, is called for in suppurative cases, in cases where there is good ground for suspecting deep suppuration, and also in the relapsing and rapidly-perforating cases. The best incision is the oblique one, placed at right angles to an imaginary line drawn from the right superior iliac spine to the umbilicus. This should be from two to four inches long, and should be placed about two or three inches internal to the iliac spine. In suppurative cases the incision should be placed over the seat of suppuration, since thus there is less risk of opening the peritoneal cavity. The appendix should be removed in suppurative cases only when this operation is readily effected without opening the general cavity. The risk of fæcal fistula is lessened by suturing the muscular and mucous walls of the stump of the appendix and then invaginating this into the cæcum and stitching the peritoneum over it.

HARSANT, in commenting on this paper, states that he has had two patients under observation, one of whom had four attacks, the other three. Both have now been free from trouble for several years, having apparently recovered without operation.

Low pointed out that post-mortem appearances offered insuperable objections to the theory that a foreign body caused the disease, and compared the appendix to the tonsil.

MITCHELL CLARKE held that the pulse and temperature were the best indices as to the need of operation. If, after first yielding to treatment, the pulse became more rapid and the temperature higher, this would indicate that operation is required. He reported the case of a boy in whom perforation into the general abdominal cavity had presumably taken place two days before he was seen, and whose abdomen contained free pus and gas. This boy recovered after operation by Bush, who simply opened and washed out the peritoneal cavity, and a few days later performed a second operation, removing the appendix.

NEWNHAM deprecated operative interference in all cases of appendicitis, and said that, although he had seen an enormous number of such cases, he had never known one to result fatally, nor any in which operation was necessary.

#### THE USE OF ICHTHYOL IN GYNÆCOLOGY.

POLACCO (abstracted in *American Journal of Obstetrics*, April, 1894) reports nine hundred and seventy-two gynæcological cases cured by himself and colleagues by the use of ichthyol, these including eczema of the vulva, pruritus, vaginitis, vaginal cicatrices, erosions of the cervix, ectropion, hypertrophy of cervix, multiple lacerations of cervix, deep lacerations of cervix, cervical endometritis, subinvolutions, and indeed all the known gynæcological affections.

Eczema and pruritus were cured almost at once. In vaginitis the results were most prompt and gratifying, the ichthyol being applied on tampons in antiseptic glycerin solutions. For endometritis ichthyol is used in ten- to twenty-per-cent. solution, and not only cures for the time, but prevents a return of the trouble. The drug was tried in some cases of metritis and parametritis; not more than  $11\frac{1}{2}$  grains were rubbed into the skin by means of a ten-per-cent. ointment, and it was also applied to the vagina by means of tampons impregnated with the glycerin solution. After three or four days of this treatment, combined with rest in bed and the mild use of saline purgatives, convalescence set in promptly.

The drug is absorbed, is comparatively cheap, since it is used in ten-per-cent. or at most twenty-per-cent. solution, does not permanently stain the clothing, has an odor which is easily disguised by volatile oils, and, unless used in conjunction with lanoline, never irritates the skin. Polacco concludes with the statement that ichthyol is the most potent analgesic known and adopted in gynæcological therapeutics of the day. It has a decided absorptive action upon exudations, manifested more rapidly when used in the early stage of the disease.

ALBERTOLETTI in the main agrees with the report just quoted, with the exception that he holds that ichthyol does not cause the absorption of exudation.

COLOMBINI states that cotton soaked in five- or ten-per-cent. solution of the sulph-ichthyolate of ammonia in glycerin causes speedy disappearance of acute vulvitis with painful erosions. In vaginitis tampons impregnated with this solution are equally efficient. In urethritis a five- to ten-per-cent. solution of ichthyol in water, when injected, caused prompt subsidence of symptoms. Cervical endometritis with ulcers was quickly cured in from six to eight treatments with tampons soaked in ten-per-cent. ichthyolate in glycerin, while the same solution, carried in by means of gauze wrapped around the body of a Playfair sound,

cured endometritis of the body of the uterus. Where the cervix was insufficiently dilated to allow of this procedure, intrauterine injections were made by means of a Bozeman double recurrent catheter.

#### ANTISEPTIC POWDER IN THE TREATMENT OF CANCER OF THE UTERUS.

LUTAUD insufflates the following powder daily, the os being exposed by means of a speculum :

R Acid. salicyl., gr. iv;  
Acid. boric., ℥i;  
Iodoform, ℥ii;  
Ess. eucalypt., q. s.

—*Der Frauenarzt*, Heft 3, January 9, 1894.

#### FORMULA FOR THE ADMINISTRATION OF IODIDE OF POTASSIUM.

FOURNIER suggests the following formula for the administration of iodide of potassium :

R Iodide of potassium, ℥vi;  
Anisette, ℥ii;  
Simple syrup, ad ℥vi.  
Dessertspoonful three times a day.

—*Der Frauenarzt*, Heft 3, January 9, 1894.

#### TREATMENT OF ACUTE METRITIS.

The following treatment of acute metritis is given in the *Revue Obstetricale et Gynécologique*, March, 1894: Absolute rest, laudanum fomentations upon the stomach, frequent hot irrigations with emollient and slightly aromatic liquids. The following represents an excellent formula :

R Chloral,  
Naphthol,  
Alcohol, of each, ℥iii;  
Water, ℥viii.

A tablespoonful of this mixture is added to a quart of hot water. After each injection there is placed in contact with the os a pledget of absorbent cotton soaked in the following mixture :

R Iodoform, ℥i;  
Chloral, ℥i;  
Glycerin, ℥iii.

In case of very severe pain, blisters applied to the abdominal surface give relief, or in milder cases these may be replaced by compresses sprinkled with turpentine or alcohol and covered with oiled silk. Scarification and leeches applied to the os are absolutely useless during the acute stage.

#### RADICAL OPERATION FOR LARGE HERNIA IN MALE CHILDREN.

SZUMAN (*Therapeutische Monatshefte*, Heft 3, 1894) holds that as soon as a congenital hernia shows signs of increasing operation should be undertaken, especially when the retention apparatus is not efficient. He operated on a child aged two years, with a scrotal tumor hanging to the knees. He dissected the neck of the hernial sac from the surrounding structures of the cord, freeing this sac to the external ring. A ligature was then placed as deeply as possible and the wound was tamponed with iodoform gauze. Two years later the child came under observation; the cure was found to be perfect.

A second child operated on was fourteen months old. Four and a half years later the cure was found to be permanent.

The third child was three months old when operated on. Eight years later the cure was perfect.

The fourth child had a colossal double scrotal hernia. In these operations free dissection of the neck of the hernia was extremely difficult. The dissection should always be begun high up, since here it is easier. When it cannot be completed in the lower part of the scrotum, as is often the case in congenital hernia, this portion is cut off and drained.

#### TREATMENT OF VENEREAL LYMPHADENITIS.

NOBLE (*Archiv für Dermatologie und Syphilis*, Bd. xxvii., Heft 1, 1894) reported to the Vienna Dermatological Society the results of his investigations into the method of treating venereal lymphadenitis proposed by Lang.

The treatment pursued is as follows: When a case was presented in which abscess-formation had taken place, this was punctured with the point of a bistoury and the contents evacuated by moderate pressure. The remaining cavity was washed out with a one-per-cent. solution of nitrate of silver driven in with some pressure. This solution was evacuated through the puncture and pressure bandages applied. In very large abscesses two puncture-points were made, more efficient drainage being thus secured.

This treatment of puncture, evacuation, and injection was continued two or three days, until there was no further secretion. This usually required but two injections. At first, after treatment there is a thick chocolate-colored exudate; finally only blood-stained serum escapes on puncture, and this, if it persistently accumulates, may often be left to absorption. When a case was presented in which abscess-formation

was not complete, showing uncertain fluctuation, the injections of nitrate of silver were forced not only into the cavity left by partial evacuation of the pus, but also in the surrounding infiltrated tissue. This causes, in two or three days, a painless softening of the diseased glands, or even brings about a more favorable result,—*i.e.*, prompt resolution of the inflammation. The treatment is contraindicated in the strumous form of buboes. These cases require radical operation. In seventy cases treated according to the method just detailed the average period of healing was ten days. In eight cases healing occurred in from three to five days. In eight cases cure was not accomplished for twenty-five to thirty days. In the great majority convalescence was complete in from five to ten days.

#### EXTERNAL APPLICATIONS OF SALICYLIC ACID.

MÜLLER (*Therap. Monats.*, March, 1894) claims that salicylic acid, when applied externally, exercises a powerful effect upon the economy, being especially efficacious in acute rheumatism when this is accompanied by skin-symptoms. Salicyl ointment he found particularly efficacious against the violent rheumatoid pains accompanying grip. In the case of idiosyncrasy against salicylic acid, he found the drug was taken perfectly when it was administered in wine of creosote.

#### PROSTATO-CYSTOTOMY.

BELFIELD (*Journal of the American Medical Association*, April 7, 1894) calls attention to the fact that the operation of Kraske for extirpation of the cancerous rectum has suggested to various surgeons a method of reaching important structures placed at the base of the bladder. Ullman removed a tuberculous seminal vesicle; Dittel proposed and Kuster executed the post-urethral excision of lateral masses of the enlarged prostate; Cabot suggested the extraction of ureteral calculi; and the present writer drained a suppurating prostatic utricle. Belfield then proceeds to call attention to what he terms posterior prostatocystotomy.

The anæsthetized patient is placed upon the left side, thighs flexed to a right angle, hips elevated eight inches or more, rectum empty, and bladder moderately distended with air; a broad grooved staff is introduced. From a point midway between the tip of the coccyx and the right tuber ischii a superficial incision

is carried forward, curving towards the raphe, which it reaches one and a half inches in front of the anus. Guided by a finger in the rectum and the staff, by blunt dissection the rectum is separated from the membranous urethra, prostate, and bladder-wall. The rectum being held out of the way by a retractor (it would be desirable here to ligate on each side the prostatic venous plexus, if unusually large), the point of a knife is made to enter the groove of the staff exactly in the median line half an inch above, and is carried downward to a point the same distance below the upper border of the prostate, dividing the trigone, the so-called "middle lobe" of the prostate, and the prostatic utricle, and terminating just above the orifices of the ejaculatory ducts. If required, the incision can be safely extended in the median line upward half an inch and downward through the thin commissure joining the lateral lobes of the prostate.

When the divided edges are drawn apart, the entire prostatic surface is accessible to eye and finger; the bladder can be drawn downward and the ureteral orifices exposed (on the cadaver). Complete suturing of the wound in bladder and prostate, while practicable, would probably be less desirable than partial suturing and drainage through the upper angle of the wound, which corresponds with the lowest point of the contracted bladder. This incision, he holds, gives perfect command of the entire prostate and base of the bladder and perfect drainage, hence reducing the dangers of infiltration to a minimum. It is also practicable in cases of contracted bladder in which the suprapubic method is not adapted. The author has used this cut for removing a calculus and lateral masses of the enlarged prostate.

Belfield also describes a new method for drainage of the bladder. A tenotome is made to enter the perineum with horizontal blade an inch or more in front of the anal margin, is passed between the prostate and rectum, and thrust into the bladder between the upper extremities of the prostatic lobes. A slender forceps is carried along the blade, the knife is removed, and the channel dilated by separation of the branches of the forceps for introduction of a drainage-tube. This incision opens and drains the prostatic utricle, an important factor in prostatocystitis from any cause.

#### CHRONIC RELAPSING APPENDICITIS.

BULL (*Medical Record*, vol. xlv., No. 13) records eighteen operations for relapsing appendicitis with one death. These operations



were done because of acute attacks so frequently repeated as to lead to the belief that there was a chronic appendicitis which had no tendency to disappear spontaneously or with the aid of medical measures. In most cases there was a tumor and a history of chronic invalidism. In about eighteen or twenty cases he advised against operation, because the attacks were at long or irregular intervals, and the interval was apparently one of good health, without tumor and without history of intestinal irregularity or pain.

Two of the operative cases were females. In seven pus was found on the operation, either in the appendix or close by in the false membrane, and the adhesions were firm and thick in the majority. One patient had been drained for an abscess only eighteen months previous to operation. The appendix was not found. Following recovery there were occasional attacks. On operation, the appendix was found, with lumen still patent and sharply curved, buried in a thick layer of false membrane lying on the surface of the cæcum.

Four hundred and fifty operations by various operators are tabulated, with eight deaths. Perhaps five or six per cent. would be nearer the truth.

#### SURGICAL USES OF SULPHO-NAPHTHOL.

BERRY (*New England Medical Monthly*, No. 145, vol. xiii.) strongly commends sulpho-naphthol in surgical practice. In the treatment of incised and lacerated wounds these lesions and the surrounding parts are thoroughly cleansed with a brush, and a one- or two-per-cent. solution of the drug is applied. Sutures are then employed, and the wound dressed with sterile gauze. For vaginal and uterine douches half to one drachm to the quart of water is the proper strength. Chronic cystitis is benefited by frequent irrigations, half a drachm to two quarts. This drug is not neutralized by albumin, does not injure instruments, does not irritate the hands, and is free from toxic properties. It is not as powerful an antiseptic as bichloride of mercury or carbolic acid.

#### TREATMENT OF ULCERATION OF THE RECTUM.

MATHEWS (*New England Medical Monthly*, No. 145, vol. xiii.) thus treats ulceration of the rectum. Benign ulcers absolutely require rest. This is best secured by a preliminary thorough purging and by confinement to bed combined with local applications. The diet should be liquid. The ulcer, if indolent, should be

touched with nitrate of silver, and after a healthy action is established, daily injection should be made into the rectum of,—

R Sweet almond oil, ℥i;  
Iodoform, gr. v;  
Nitrate of bismuth, ʒss.

Malignant ulceration should be excised at once. Tuberculous ulceration should be removed by the curette, if possible; if not, by the knife. Syphilitic ulceration is, when combined with stricture, about as incurable as cancer; hence resection is the only means of treatment.

#### ELÆOMYENCHYSIS, OR THE TREATMENT OF CHRONIC LOCAL SPASM BY INTRAMUSCULAR INJECTION AND CONGELATION OF OILS.

On the basis of cases treated by the method indicated in the title, CORNING (*New York Medical Journal*, April 14, 1894) writes in support of this treatment.

It is quite possible to inject melted, non-irritating oil into the living tissues, to allow it to congeal there, and to remain indefinitely without provoking the least inflammatory action. The vigor of muscular action may be sensibly diminished by curtailing the blood-supply. It follows from these two propositions that by injecting melted oil into a spastic muscle in sufficient quantity to interfere materially with the blood-flow and metabolism, then solidifying by means of cold, there would result interference with the nutrition and curtailment of the action of the muscle, the hardened oil acting as a species of intramuscular splint.

The case on which this method was tried suffered continuously for four months from clonic spasm confined to the left splenius muscle. The spasms were extremely violent and recurred frequently. Oil of theobroma was mixed with paraffin in such proportion that it remained solid at the temperature of the body. Eight hundred minims of this mixture were injected into the centre of the muscle. The fluid oil was promptly rendered solid by the aid of an ether spray and subsequently by the application of a small ice-bag over the muscle. The oil was so injected that it extended almost the entire length of the muscle. Some hours subsequently, as there was no inflammatory reaction, supplementary injections were made, forming fat segments, extending across the muscle at right angles to its axis. These injections were hardened as before. The clonic spasms ceased immediately, and there

remained only a certain rigidity, which became gradually less. There was no pain; the head could be held in normal position; the patient could sleep on the affected side without discomfort.

These injections should be made while the muscle is flexed, to allow of more even distribution and to secure splinting in this position. If necessary, ether may be administered to accomplish this where we are confronted with severe tonic spasm. The second point of importance is the distribution of the oil, which should be made regularly through the affected muscle; moderate massage greatly facilitates this part of the operation. A needle of large size, provided with an ample lumen, is necessary for the injection, and the syringe should hold at least half an ounce and be heated to 110° F. before filling.

COCAINE-POISONING.

KROGIUS (*Centralblatt f. Chir.*, No. 11, 1894) cites cases collected by Réclus, all due to colossal doses, and holds that, instead of injecting the drug just beneath the skin or in the substance of this, it should be driven deep down as near as possible to nerve-trunks. The injection should be made as the needle is being withdrawn. From 15 to 20 drops of a two-per-cent. solution are employed. After about ten minutes complete anæsthesia over a comparatively large area is produced. Thus, in the case of the fingers, for instance, by driving the injection in at the root, near the position of the supplying nerve-twigs, the entire finger to its deepest part becomes completely anæsthetized.

Reviews.

A TEXT-BOOK ON DISEASES OF THE EYE. By Henry D. Noyes, A.M., M.D. Second and revised edition. Illustrated by five chromo-lithographic plates, ten plates in black and colors, and two hundred and sixty-nine wood-engravings.  
New York: William Wood & Co., 1894.

Many good things in this world, like Massachusetts, need no eulogy, and, among text-books devoted to ophthalmology, Dr. Noyes's work easily takes high rank in this respect. We admired and commended the first edition, and are glad to welcome the second and reiterate this commendation.

The whole book has received thorough revision, many portions being practically rewritten. A notable feature is the author's familiarity with the literature of ophthalmol-

ogy, which has been utilized so well that the reader is quickly in possession of all that is valuable in the text-books, brochures, and papers bearing upon the eye. To quote from the preface, "the writer's judgment on new suggestions has been freely given on points where he has opinions," and it should be remarked that Dr. Noyes usually has opinions to which one may well pin his faith.

The departures from the paths of strict literary rectitude, to borrow a sentence from a well-known reviewer, are more frequent than agreeable, but they are readily forgiven in a book which, in other respects, is so good, so replete with sound teaching, clear judgment, and the fruits of wide experience.

ANOMALIES OF REFRACTION AND OF THE MUSCLES OF THE EYE. By Flavel B. Tiffany, M.D.  
Kansas City, Mo.: Hudson Kimberly Publishing Company, 1894.

The object of this book, according to the preface, is to present the subject of the anomalies of refraction and of the muscles of the eye "in as clear, brief, and concise a manner as possible, embracing all essentials, besides collaborating recent advancements not to be found in the existing books." The main portion of this task the author has accomplished fairly well, and many of the methods of examining for anomalies of the functions of the ocular muscles are more fully discussed in this volume than is customary. This is a commendable feature.

The book is profusely illustrated, and some of the cuts, especially those inserted in connection with the descriptions pertaining to reflection and refraction of light, answer an excellent purpose; others are dismal failures, and a goodly number are suitable in instrument-makers' catalogues, but have no particular value in a scientific treatise. The plates depicting the author's results in correcting strabismus are attractive pictures, but their introduction is an exhibition of questionable taste. The diagram of a persisting hyaloid artery is credited to Noyes and not to the author from whom Dr. Noyes borrowed it,—namely, the late Dr. Little.

Dr. Tiffany coins a new plural for apparatus,—"apparati;" perhaps there is authority for this word, but we cannot find it. He inveighs against "blurred print," and has carefully avoided criticism from this stand-point, since the type of his own book is excellent. A novel feature is the introduction of illustrated biographical sketches of Helmholtz, Donders, and Landolt.

LES AGENTS PHYSIQUES ET NATURELS: agents thermiques, électricité, modifications de la pression atmosphérique, climats et eaux minérales; cinquième partie des *Leçons de Thérapeutique*. Par le Dr. Georges Hayem, professeur à la Faculté de médecine de Paris, médecin à l'hôpital Saint-Antoine, membre de l'Académie de médecine.

We have reviewed in the pages of the THERAPEUTIC GAZETTE during the last two years the preceding volumes of this series by Professor Hayem, and have taken occasion each time to speak in a laudatory manner not only of the value of the books themselves, but of the good work which this indefatigable French author is capable of doing. The previous volumes, it will be remembered, dealt, the first with drugs, and the second with the application of drugs to disease. The present volume is devoted to the consideration of remedial measures other than drugs, and takes up exhaustively the use of heat, hydrotherapy, electricity, atmospheric pressure, aerotherapy, climates, and mineral waters, forming with its predecessors a complete monograph upon the therapeutic resources of a modern well-educated physician. We wish that it were possible to have these books translated and published in English, for they combine in a concise form a large amount of information which should be possessed by us all. The price of the volume in the French language is but \$2.50.

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## Correspondence.

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### LONDON.

(From our Special Correspondent.)

It requires a good deal of experience with any new drug before it can be said to come into popular favor, and the pioneers who experiment with such new substances generally find it somewhat difficult to get others to help them in making the necessary observations. Being personally much interested in pharmacological matters, I try to acquaint myself with most such experiments or their results. Two such drugs have recently attracted some attention from their vaunted use in ophthalmic medicine, and the accompanying notes, which I have been able to put together as the result for the most part of personal observation, may be considered as perhaps worthy of perusal.

First, with regard to "tropa-cocaine," introduced by Chadbourne about two years ago, and used first by Schweigger and others in German clinics. This was said to be a most satisfactory local anæsthetic for even the major ophthalmic operations, possessing the advan-

tage over cocaine that it exercised no cycloplegic effects, and could be used in those cases in which a rise of tension was to be feared. Owing to the difficulty in obtaining the drug, as well as to its great cost, tropa-cocaine did not get a very extended trial in this country, until a little while ago attention was again drawn to it in a paper read before the Ophthalmological Society. The author had used tropa-cocaine in the form either of solution or of ophthalmic tabloids, and gave records of the satisfactory performance of most of the ordinary operations under the anæsthesia induced by its means. After this paper had been read, tropa-cocaine was stocked by one of the leading drug-houses, thus enabling a much more extended trial to be made of its efficacy as an anæsthetic, and I have personally seen it used in a great variety of operations. For the removal of foreign bodies it leaves nothing to be desired, as these can be seen so much more readily against a background of iris, and the patient is not troubled with the inconvenience of a paralyzed accommodation for some hours after. The pain accompanying iridectomy or cataract extraction is also satisfactorily abolished, while absorption into the system is not followed by unpleasant consequences. Besides all this, tropa-cocaine has been very successfully employed as a dilute solution in cases of painful inflammation of the conjunctiva, abolishing the excessive irritability without interfering with the vascular supply. When it becomes better known and cheaper it cannot fail to come into very general use.

In a recent paper by Dr. Casey A. Wood, of Chicago, I notice the curious statement, towards the end of the work, that "tropa-cocaine has, so far as my experiments went, no cycloplegic advantages over cocaine, while its mydriatic action seemed to me to be less than that of cocaine" (Pan-American Congress, 1893). I cannot help thinking that Dr. Wood must have confounded tropa-cocaine with some other drug, or been supplied with the wrong material, for, as I have pointed out above, the pure substance has neither a mydriatic nor a cycloplegic effect. It is only the pure synthetic drug that is suitable for ophthalmic work.

With regard to the second drug—scopolamine—about which I was going to speak, I find that this is already somewhat known in America, and has been mentioned recently in the pages of the GAZETTE. It became first known to me in December, 1890, when a specimen was submitted to me by Messrs. Burroughs and Wellcome. At that time I made a number of physiological experiments with this suggested

substitute for atropine, none of which, however, were published. As it is now highly improbable that they ever will be published in concrete form, I take this opportunity of giving the chief conclusions I was able to draw from my experiments. First, when tested on my own eye, it proved a good mydriatic even when used in very dilute solutions (1 to 1000). When complete mydriasis had been produced it lasted for about a day and a half, after which accommodation became again possible, the pupil becoming normal in the course of the third day. Its action was not at all unpleasant and produced no uncomfortable effect upon the throat. Its general action when tested on animals seemed considerably less than that of corresponding doses of atropine. In order to produce the well-known vagus effect of atropine with scopolamine, greatly larger doses were necessary; in fact, I see from the blood-pressure tracings which I then took, and to which I have just referred, that the inhibitory action of the vagus on the heart was not completely paralyzed by the doses I employed.

Passing now from physiological experiments, which agree, I believe, in results with those made and published recently by other observers, I would describe the clinical use, as observed in this city, of the hydrobromate, which has been placed on the market by Merck. My own experience has been mainly directed to its use in the estimation of refractive errors. For this purpose a 1 to 250 solution has seemed most suitable. The instillations have in each case been made by the surgeon, and absolutely no untoward effects have been observed. Three instillations, at intervals of about half an hour, using each time about two drops from a Liebreich drop-bottle, have in almost every case sufficed to completely paralyze accommodation and to produce full mydriasis, which, if left to itself, has passed off after at most three days. Generally, however, the patient is given a disk of eserine (Wyeth) to insert into the conjunctival sac on the morning following, and this has had a material effect in shortening the period of inconvenience.

The solution of a strength of 1 to 500 has been used also in a variety of conditions in which atropine is usually employed, and those who have used it speak highly of its efficacy in some cases of phlyctenular keratitis and iritis. It has not been known to raise intraocular tension, but perhaps experience has not been sufficiently extensive to warrant the statement that such an effect may not follow its use in some cases. All tell me, and my own experience tallies with that of others, that scopolamine

is quite as efficacious as atropine, and that its action is free from the unpleasant by-effects produced by the latter drug.

I hear very varied opinions as to the enjoyability or otherwise of the recent Medical Congress at Rome. The general opinion seems to be, among compatriots most of whom visited the Eternal City for the first time, that the outside attractions were too great to allow one to give a due amount of attention to the more serious sectional work.

#### THE TREATMENT OF TONSILLITIS.

To the Editors of the THERAPEUTIC GAZETTE:

DEAR SIRs:—I desire to tender my professional brethren a treatment (both *local* and *constitutional*) for follicular tonsillitis, which has proved very satisfactory in my hands for several years.

If seen *very early* and no complications, Dr. Sajous's "*abortive treatment*" with ammoniated tincture of guaiac (a teaspoonful every two hours in sweet milk) will often (not always) be found quite satisfactory. If, however, called to see the patient later, which is generally the case, give calomel, 10 grains; soda bicarb., 20 grains; M. ft. chart. no. iii. One every three hours, floating on a teaspoonful of water, and no liquid after for twenty minutes. These powders to be followed by a teaspoonful or two of castor oil with 10 to 15 drops of turpentine every hour (for first twelve hours), excepting the hour of the powders. Gargle and swallow a teaspoonful of a saturated solution of c. p. sulphate of sodium. After the powders are all used and worked off with the castor oil and turpentine, alternate the solution of sulphite of sodium with the following chloride syrup, both as gargle and systemic remedy:

R Pot. chlorat, ʒi;  
Ammon. mur., ʒi;  
Tinct. ferri mur., ʒiv;  
Glycerini, ʒiiss;  
Syr. limonis, ʒii. M.  
Dose.—Teaspoonful.

If for a child under three years reduce dose of all the remedies and dispense with the gargling, but give no liquids for ten or fifteen minutes after giving the liquid medicine.

This treatment will prove most satisfactory in every case, and comports well with the late theory that it is really "a germ disease" and *infectious*.

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## Original Communications.

### MORE HEROISM IN COUNTRY SURGERY.

A PAPER READ BEFORE THE WEST BRANCH MEDICAL SOCIETY OF PENNSYLVANIA, JANUARY 30, 1894.

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IT has been intimated to me that my subject is somewhat obscure. I therefore pause a moment to define more fully its meaning. More surgical heroism on the part of those practising surgery in country towns and rural districts is needed. These men should be

more fearless in the use of surgical measures after they have diagnosed a case; or in cases of doubtful diagnosis, if these measures will enable them to ascertain the malady, they should not hesitate to use them.

That such hesitation exists, that we countrymen follow too often and too long an expectant plan of treatment when radical measures promptly applied are better, will not be denied by any of us, I think.

This being true, we need to be more heroic and fearless in the exercise of these great powers. "Delay is dangerous," "He who hesitates is lost," are axioms not more true

anywhere than in the life of a surgeon. This paper is presented in the hope that it will strengthen the weak hearts and feeble knees among us. To observe and analyze failures is oftentimes better for both doctors and patients than to contemplate successes.

It is not my intention, had I the ability, to present an article of fine literary finish, nor do I wish to pose as an instructor and to lay down dogmatically certain rules of action. It is my hope that discussion may be provoked, which will make of us better men, better surgeons.

Some years ago I was hastily summoned to the bedside of a girl who had for several days been suffering with diphtheria, to find that she had developed laryngitis, presumably diphtheritic. Emesis proved of no avail. The symptoms indicated a rapidly fatal issue. There was but one hope,—tracheotomy. Intubation was then unknown. In college it had been impressed upon me by our professor of surgery to never operate with any other than a stiff-backed knife. Having with me only my pocket-case of folding knives, I hastily went to my office, two squares away, for proper instruments. When I returned the patient was dead. It is possible that the girl would not have recovered had the operation been done. It was probably diphtheritic laryngitis, and very few of these cases get well whether operated upon or not. This is a very good salve for an irritated conscience, and is applied entirely too frequently with soothing effect; but I have never been able to get away from the thought that I am responsible for not having given the girl that last chance for her life. If I had possessed the courage to depart from my teachings, and had opened the trachea with any knife at hand, I would at any rate have kept my patient from choking to death, and the result might have been different.

Nor are these days of hesitation gone by. Only a few months ago I was called in consultation with a recent graduate to see a case of diphtheritic laryngitis. The child was cyanotic and unconscious. In answer to my question why he had not operated, the doctor replied that he did not have a tracheotomy-tube. Not knowing the nature of the case, I had not brought intubation set, tracheotomy-tube, or proper instruments for operation, but I had a pocket-case. We operated at once without anæsthetic, and tied back the sides of the wound and trachea with silk. The operation did not prevent death, but it prolonged life for twenty-nine hours and allowed an easy end. What the result might have been had intubation or tracheotomy been done twenty-four or forty-

eight hours sooner we cannot say. Certain it is, however, that the child had not the best chance possible.

In 1884 I had under my care a man suffering with some intestinal obstruction or what seemed to be such. He did not have fecal vomiting, but had many other symptoms, which led me to make the diagnosis of probable intestinal obstruction. For several days an expectant plan of treatment was carried out without benefit, and finally the man died. No post-mortem was allowed, and I therefore cannot give you a correct diagnosis of the case. Had I possessed a sufficient amount of heroism I should have opened his abdomen. I could have probably discovered the trouble, relieved it, and saved the life of my patient. It is true that the diagnosis was not certain, that the operation was a dangerous one, and that the community might have accused me of killing the patient. These are all truths, but there is also another truth, that the patient is dead without my having exhausted the possibilities of my profession for his relief. More heroism might have saved his life.

Less than two years ago, in a neighboring town, a most estimable Christian woman, the wife of a prominent citizen, was ill with some abdominal trouble. Day after day her physicians saw her fail in strength. That the trouble was abdominal was clear, that it was appendicitis was probable, though not certain. The expectant plan was followed until she died. The post-mortem proved it to be a case of suppurative appendicitis, which could have been relieved by operation. The patient would most likely have recovered from the operation, and again blessed home and town with her beautiful life full of good deeds.

In June, 1892, a locomotive fireman was suddenly seized with a severe illness while on duty. He was taken to his hotel and medical aid summoned. He got worse, and a consultation of physicians was held. The diagnosis of appendicitis was agreed upon, and the expectant plan of treatment was followed. After some weeks the man had recovered sufficiently to be about his room, when he was again attacked with the disease. The same plan of treatment was followed with a like result. This time he got even better than before, was able to walk about, and was preparing to return to work when he was seized with a third attack. The same physicians attended him in each illness. During this third attack I was invited to give an opinion of the case. I suggested that it was one of recurrent suppurative appendicitis, and should be operated upon at once. The ex-

pectant plan had twice been successful, and the attending physicians were not heroic enough to adopt the surgical proceeding. The former plan of expectancy was followed for two days, when the patient was suddenly seized with severe abdominal pains and went into collapse. Every effort was made to stimulate him and to bring him out of this condition, but he failed to respond to treatment. He sank rapidly, became unconscious, and in a very brief time passed into that "country, from whose bourn no traveller returns." A post-mortem was not allowed, so that I cannot state positively that it was a case of suppurative appendicitis. This was the diagnosis of the physicians, and is probably correct. Operation during the first or second attack or at the beginning of the third would most likely have been successful and have saved the life of the patient. The courage of the attendants was not equal to the occasion. Another opportunity to benefit humanity and to show the ability of our art to overcome the dire circumstances of our environment was lost. Another life was sacrificed because of a lack of heroism in country surgery.

In 1888, Mr. L., forty-five years of age, was lifting to his utmost strength, when he was seized with pain in the right inguinal region and became faint. He was assisted to a house near by and given some whiskey and water. He made an examination as soon as possible, and found that his truss had broken and allowed his hernia to come down. He replaced it, as he had done frequently. He said that it went back easily. He was removed to his home, and took a large dose of Epsom salts, as was his custom after having trouble with his hernia. Pain became severe, and I was called. The bowels had moved three times during the day. The pain was partially relieved by hypodermic injection of sulphate of morphine, and some tablets of the same were left to be used if the pain returned. There was no evidence of hernia present. So far as I could discover, it had been successfully reduced. On visiting him the next day, I found that he had used more of the morphine than should be necessary to relieve ordinary pain, and was yet not entirely free from it. Another examination could discover no hernia. Mild cathartics were ordered, and the morphine continued as needed, with hot fomentations over the abdomen. The next day (the third) he was in about the same condition, and I asked for consultation. The consultant lived twenty miles away. He arranged to come the following day, the fourth of Mr. L.'s illness. A wreck on the railroad prevented his coming. This I learned on the fifth day. Several en-

emas of warm soapsuds had been given on the fourth day and night. They came away, but did not bring fecal matter. The fifth day the patient was free of pain, had no vomiting, was taking a good amount of nourishment, and was feeling quite well. Under the circumstances the family concluded to avoid the expense of a consultant at that time. The sixth, seventh, and eighth days were about the same as the fifth, above described. On the eighth day I again asked for consultation. There had been no passage of fecal matter, though mild cathartics were used and enemas given occasionally. There were no urgent symptoms, the patient was bright and cheerful and was eating well; yet I felt uneasy. His facial expression seemed to me to point towards some abdominal trouble, and, as the slang phrase puts it, "I felt in my bones" that something was wrong within the man. The family reluctantly yielded to my request for consultation, thinking it was unnecessary, as he was "getting along so well." I had not allowed him to get out of bed nor to sit up in it. Had cautioned him to be very careful even in turning and moving about in the bed. On this (the eighth) day I particularly tried to impress this upon him. The consultant answered that he would come the following day, being the ninth of Mr. L.'s illness. We prepared ourselves for operation, and went to the patient's house, to find that he had died half an hour before our arrival. The history given was as follows: He had felt better than usual, and when some friends had come in he concluded to get up and sit with them for a while. He got out of bed, walked about fifteen feet into the room, when he fell to the floor. He was picked up, put back into bed, and expired almost immediately. The whole time occupied was about twenty minutes. A post-mortem was requested. Permission was given, and we did it at once. We found that the inner abdominal ring was divided into two parts of unequal size by a cord of tissue about one-eighth of an inch in diameter. In the smaller opening was a fold of the intestine tightly constricted and gangrenous. A tear existed on the inner side and intestinal contents were in the abdominal cavity. The tumor on the outer side was about as large as a chestnut and could not be felt through the abdominal wall. The family exacted a faithful promise that we would take nothing from the body; and though we explained to them the peculiarity of the case and how valuable the specimen would be to us, they would not permit us to have it, and it was buried with the body. The man probably ruptured the gut by getting out of bed and

walking across the floor, and died of collapse resulting therefrom. The case was in many respects a very peculiar one. The symptoms were somewhat misleading. Perhaps the majority of practitioners would have pursued the same course that I did; but had my courage been sufficient to have done an operation early for diagnostic purposes, how easily a life would have been saved!

A case of only recent occurrence is the following:

Mr. S. had been suffering for several months with some suppurative disease of the upper leg. Diagnosis of osteomyelitis of the femur was made, and advice given to amputate the leg at once. The attending surgeons did not agree to this, however, and continued medical treatment and local washes for six weeks longer. By the end of this time the patient was much worse. On cutting into the leg, the bone was found to be almost completely destroyed, and amputation had to be done about three inches below the acetabulum. The operator remarked at the time that the operation had been too long delayed and that the case would end fatally. This prediction proved correct, and the man to-day sleeps beneath the sod as a result of too little heroism on the part of country surgeons.

I have presented thus far a series of cases having the same mournful termination, and you may well ask the question, Does the heroic use of surgical measures show better things? I answer, Yes. Worse results could not occur than the expectant treatment has produced in the cases above named. Time will not permit the recital of many cases. The few I present cannot be as fully reported as they deserve, but they will be sufficient to show what can be accomplished by the timely use of ordinary intelligence combined with ordinary surgical skill.

The first case which I present is that of Mr. S. He had a double fracture of the femur. Union took place at one point of fracture but not at the other. Operation was suggested from time to time, but was as often deferred. Finally it was consented to. The leg was opened up. The ends of the ununited bone were brought into full view and sawed off. They were put into proper apposition and pinned by a long steel pin. The leg was put up in plaster of Paris. Perfect union was attained, and the man has been earning a living for more than four years as fireman and engineer of a stationary engine. His leg is an inch and a half shorter than the uninjured one, but it is just as strong, and the man walks without much of a limp.

In July, 1802, Mr. C., a train agent, had a

difficulty with some passengers. A fight ensued, during which he received a kick in the abdomen. It caused him a little shock at the time, some vomiting, and a good deal of pain. He vomited blood and passed blood per rectum the next day. He was in bed a few days, and, feeling better, he left his hotel and rode seventy miles on a train to a more congenial stopping-place. He was able to walk about, though he had constant pain in the abdomen at the point where he had been kicked. His bowels were constipated. One morning, when straining at stool, he was seized with violent abdominal pain. He fell from the closet-seat to the floor in collapse, and remained thus for several hours, notwithstanding the combined efforts of a number of physicians. I saw him about ten hours after the attack occurred. His temperature and pulse were subnormal and his general condition bad. It seemed clear that there was some abdominal trouble, but not clear just what it was. The expectant plan of treatment was agreed on, with the suggestion that if he became worse a laparotomy should be done or, at least, an exploratory incision made. There was not much change in his condition during the next twenty-four hours, but there was no improvement. During the third day he had one slight and one severe attack of collapse. I insisted that laparotomy must be done and an effort be made to save the man's life, which, under the existing circumstances, was fast ebbing away. The operation was performed on the fourth day, about seventy-six hours after the first attack of collapse. We found at the point of injury a diseased gut adherent to the abdominal wall. It was already considerably constricted, and no doubt would have been almost, if not entirely, occluded as the adhesion became more firm. There was present a beginning suppurative peritonitis. The adhesion was carefully destroyed, the gut antiseptically treated, the abdominal cavity thoroughly washed out with an antiseptic solution, and the wound closed and dressed in the usual antiseptic manner. The man recovered and has been at work ever since. I think that this case clearly shows the value of surgical interference for diagnostic purposes. Had we delayed operation even another day, I think that a post-mortem diagnosis would have been made. The result is all the more gratifying when we remember that this man was the sole support of a sister and a widowed mother.

Another case of great interest to me (and had I time to present the history in full you would agree that truth is stranger than fiction) is the following:



Miss G. had been ill for several months with what had been diagnosed Bright's disease, liver trouble, bilious fever, typhoid fever, by as many physicians. The fifth doctor "didn't know what was the matter." O Diogenes, search no further; here is an honest man!

Finally she fell into the hands of Dr. T. R. Williams, who diagnosed some abdominal tumor. I was invited to see her, and though we could clearly make out a tumor of considerable size and variable consistency, and though her condition indicated a suppurative process somewhere in her economy, we could not make a positive diagnosis. She was bedridden, emaciated, weak, discouraged, and about ready physically and mentally to die.

There was one hope which we offered her, and which she accepted; that hope was laparotomy. Before she was etherized her pulse was over 120 and her temperature nearly 103° F. As she lay before us under the anæsthetic, ready for the knife, the same thought was probably in each mind that was in my own: "Is this homicide?" My answer was quick and clear. It was, "No: it is the last plan my art offers to save this life." Here there was no time or place to hesitate. Quickly was the abdomen opened, and almost immediately lay before us a tumor as large as a cocoanut. One part of it was suppurating, from which we removed an ounce and a half of pus. Adhesions were numerous and firm, and great difficulty was experienced in detaching it. At this trying moment the patient ceased to breathe, her radial pulse failed, and the end seemed at hand. "Stop operating," said one; "she's dying." "I guess that's right," said another. "No, sir," said the operator. "Put that strychnine and whiskey into her and keep her breathing. Go and tell her friends she is dying, but we must have this tumor out; she's not dead." She rallied; the tumor yielded to force and was removed. The patient recovered, and to-day walks the streets of her native town, a monument to the glorious art of surgery as practised with ordinary but determined skill by country doctors.

I shall conclude this paper—which has already been far too lengthy, I fear—by the recital of a case which could profitably occupy the entire time allotted to me, and which shows how wonderful indeed are the resources of surgery, if only we have courage to obtain and use them. I shall compress the history into as few words as possible.

In the spring of 1890 I was called by an old practitioner and a man of surgical reputation to see with him a farmer's wife past sixty-three years of age. Four days before this the patient

was straining at stool, when she was suddenly seized with pain in the right inguinal region.

The doctor was sent for and saw her each day. The pain was relieved without difficulty. There was not much vomiting. The bowels had not moved, however, though many cathartics had been given, and the patient was not in good condition.

I ventured the opinion that it was a case of strangulated inguinal hernia, and ought to be operated upon at once. With this Dr. H. could not agree. I suggested that a third physician (Dr. W.) be called. He arrived the following day, the fifth from the time the woman became ill. Dr. W. concurred in my diagnosis of strangulated hernia. We operated, and found the diagnosis correct. The gut looked well except at the two points of constriction. We concluded that it was safe to return it, and did so. The case progressed nicely for a week, when fecal matter began to pass out at the point of operation through a small hole which had not healed by first intention, thus establishing an artificial anus. The patient passed the contents of the bowels in part per rectal anus and in part per artificial anus. This became a great annoyance and life was a burden. She was told that she could probably be cured by intestinal resection. She accepted the opportunity offered, took the chances, and was operated upon. We found on opening the abdominal cavity that the gut had sloughed at the two points of constriction. Fortunately, it had attached itself to the inner abdominal surface at the point of first operation. We found on examination that the only safe thing was to resect the intestine. We removed four inches of it, stitched the ends together, and closed and dressed the wound antiseptically. The patient made an excellent recovery, and is to-day, at sixty-seven years of age, healthier than before the operation. She is also cured of her hernia, at least she has not had an attack since. Dr. H., though a surgeon of thirty years' experience, would have followed an expectant plan of treatment until the patient died, rather than have been heroic enough to cut for diagnostic purposes.

The case also teaches another lesson. The woman had passed sixty-three years of her life; she was operated upon at her farm-house home; she was on a bed, and the operator on his knees beside it; she had only such care and nursing as her daughters could give her; many discouraging circumstances surrounded the case throughout; but the final outcome was eminently satisfactory.

Hence we learn that if we do not become

faint-hearted and weak-kneed, but act heroically, promptly, and determinedly, we have within our power an art that will accomplish, even in rural districts, things that seem like impossibilities.

I trust that this recital of a few of the many cases that have occurred in my short career in the practice of our noble calling has interested you sufficiently to bring forth accounts of similar experiences, and after studying together our failures and our successes, may we turn homeward more heroic men and better prepared to properly serve those unfortunates of our race who will in future require our surgical care.

### THE TREATMENT OF PHTHISIS BY TUBERCULIN.

REPORT OF MY OWN CASE, WITH OBSERVATIONS OF ITS USE IN OTHER CASES.

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THE premature surrender of tuberculin by Professor Koch; the unfounded enthusiasm that followed; the use of the remedy by the inexpert and careless; its employment by even the expert in advanced cases, contrary to the advice of its originator,—all this is familiar history. The inevitable reaction that followed this unseemly and unscientific eagerness was as emphatic in unfounded and indiscriminating condemnation *in toto* of tuberculin.

I was an interested reader of the reports following the first use of this remedy. Much of this literature was valueless, coming as it did from men inexact and unveracious. But I found that the testimony of reliable men, who severely sifted and tested their conclusions, agreed in that tuberculin did exert a specific effect upon tubercular tissue; and I reasoned that, as a result of this specific action, under proper conditions, we could hope to obtain a beneficial effect. The majority of these men reported an occasional cure. The number of these reported cures, together with the conditions surrounding the trial, was sufficient to prove that tuberculin was *the cause* of the cure. If in but one case of phthisis, after severely accurate, deliberate, rigorous therapeutic trial, tuberculin stood as the curative agent, given the same conditions, it would cure other cases.

Enough was accomplished in the first year of its use to give me faith that, when we had learned to select our cases properly and to use the proper dosage, tuberculin would prove a valuable addition to the therapeutics of phthisis. Later, reports from men who were using much smaller doses than at first given, and who were combining other approved methods of treatment with the tuberculin, increased my faith. Still later, upon finding that I had phthisis, I proved my faith by placing myself under this treatment.

The results of the use of tuberculin in my own case and in other cases under my direct observation I report in the following paper.

A persistent, hacking cough in June, 1892, first led me to suspect that I had phthisis. This cough lasted six or eight weeks. During the next ten months the only evidence of such trouble was occasional pain in the chest. My general health remained good until May, 1893; then began a gradual loss of strength. In April, 1893, the cough returned, with slight expectoration, and this continued to increase, until I began treatment with tuberculin. I took a great deal of cod-liver oil and creosote at intervals during the year, and in large doses. Though I continued the creosote steadily from the 1st of June to the 1st of August, taking from 45 to 60 minims much of the time, throughout June and July I lost ground rapidly.

During the first week of August my temperature went to 100° F. every day, and once or twice beyond that point. On August 10 it registered 100.4° F. in the afternoon and 96° F. at night, the highest and lowest I ever noticed. The cough was not severe, but frequent, raising about one-half drachm of mucopurulent sputum each time. There were two or three coughing spells each night. Sleep was restless from a condition of general malaise. A walk of two hundred rods tired me. My appetite continued fairly good, and this, with the cod-liver oil, doubtless kept my weight from failing as rapidly as it otherwise would have done. For years it has averaged one hundred and four pounds in summer and one hundred and ten pounds in winter; on August 9 it was an even hundred.

On August 10 a careful examination of my chest revealed the following: Slight dulness on percussion over the upper lobe of each side; right side, anteriorly, broncho-vesicular murmur throughout the entire area of upper and middle lobes and upper part of lower lobe. This changed quite abruptly to the normal vesicular murmur at the lower edge of the fifth rib; throughout

this area the inspiratory murmur was shortened; in the upper and middle lobes there was considerable crepitation and numerous moist râles; on the left side, anteriorly, the same physical signs were found, but not quite so intense; the extent was about the same; posteriorly, on the right side, a small area of broncho-vesicular murmur in the apex; on the left side the area of abnormal murmur extended over all the upper lobe and the upper third of the lower lobe; about the middle of the scapular region was a spot an inch and a half in diameter in which there was no respiration whatever; this was probably due to collapse, though at the time it was supposed to be an area of consolidation.

An examination of the larynx revealed considerable tubercular deposit and a small ulcer. At the base of the tongue at the left side was a tubercular ulcer one-eighth of an inch in diameter.

The microscope revealed numerous bacilli.

On August 13, 1893, I began the tuberculin treatment at the Winyah Sanitarium, Asheville, N. C. The first dose was  $\frac{1}{10}$  milligramme, the second  $\frac{1}{8}$  milligramme. I received three injections of tuberculin each week for the next twenty-seven weeks. The increase was at first by  $\frac{1}{10}$  milligramme, then by  $\frac{1}{8}$ , then by 1,  $2\frac{1}{2}$ , and finally by 5 milligrammes. The injections were given at 10 A.M. and at 8 P.M. A careful examination of the chest was made for evidence of a local reaction. This occurred in my case twenty-two times, an average of once for every increase of dose. Sometimes, however, I would react two or three times under the same dose, and at other times would have two or three increases without any reaction. The same amount was always given me twice at least, and then increased if there had been no reaction. The dose was always repeated until it had been taken twice in succession without a reaction. If a given dose produced systemic effects, even though slight, it was at once reduced; this occurred once. On October 9 I received 2 milligrammes for the first time. My temperature went a little higher on that day than it had done during the preceding three weeks. For two days I had a tired, worn-out feeling, and expectorated very freely. This is the only time in the entire course of treatment that I experienced any depressing effect from the tuberculin. At one other time it became necessary to reduce the dose because of too violent local reaction. This was on December 13, when I received 6 milligrammes. No râles or crepitation had been heard in my chest for two months previous to

this dose, but after it these adventitious sounds were quite plentiful, and there was decided increase in the bronchial character of the respiratory sound. Expectoration was increased for a day or two, but there was no increase of temperature or other systemic symptoms. A slightly increased expectoration was not rare on the morning following an injection. The last dose I received was 25 milligrammes on March 5; no reaction.

My improvement was slow, but continuous throughout. At the end of the first month I had gained five pounds in weight; two of these were lost in the next two weeks. After that time the gain was steady until December 25, when I weighed one hundred and twenty-three pounds, as much as I ever weighed in my life. Since that date my weight has varied from one hundred and twenty-two to one hundred and twenty-five pounds. The cough and expectoration began to lessen after the first month of treatment. By October 1 I was coughing almost none, and there was not more than a teaspoonful of sputum a day. Since the middle of December there has never been more than a trace of sputum and no cough. The number of bacilli had materially lessened at the end of three months' treatment. After the fifth month I was not often able to find any bacilli, and the few I did find were degenerated forms.

The temperature gradually lessened to nearly normal; for several months the daily range has been from 97° to 99° F.

The improvement in the physical signs kept pace with the improvement in other respects. The râles and crepitation had disappeared after ten weeks; the broncho-vesicular breathing gradually softened, until now respiration is normal, except in the upper lobe of the left lung, where it is much improved. There is no dulness on percussion. The spot on the left scapular region has been restored to a normal condition. The ulcer at the base of the tongue healed very quickly; the laryngeal ulcer proved quite obstinate, but was entirely well by the middle of January.

While under treatment myself I was given opportunity to examine other patients as often as I wished, and was thus helped to reach conclusions as to the value of tuberculin and as to its action.

That this remedy, which produced an intense congestion of the tubercular area when given in the large doses used at its first introduction, should produce a stimulant effect when given in small doses seemed to me a warranted, logical assumption; and it was demonstrated to

me that there is a point where the doses are sufficiently large to maintain this slight stimulant effect, and yet so small as to produce no systemic effects. An audible evidence of this stimulation is a "local reaction." For instance, upon examining a patient, I found broncho-vesicular respiration throughout the upper lobe, with a few râles at the apex. Eight or ten hours after an injection of tuberculin I found a decided emphasis in the bronchial character of the respiration, an increase in the number of râles, and some crepitation. At another time in the progress of this case there was, before taking the tuberculin, only a slight variation from the normal murmur, with no râles or crepitation; ten hours later there was a pronounced broncho-vesicular murmur. Several times I have examined patients and found no change apparent in the lungs, and yet they would tell me there had been some increase in the amount of expectoration. It is easily conceivable that the stimulation may be so slight as to be imperceptible to the ear. My observations have convinced me that this continued gentle stimulation assists in healing ulcerated areas and in producing absorption of tubercular deposits.

I found the same improvement in the lungs of my fellow-patients as reported in my own case: cessation of crepitation, of râles, and lessening of the bronchial character of the respiratory sound. In the larynx, also, my improvement was paralleled in the history of other cases, and here the demonstration was to the eyes. An increased redness of the tubercular area could be seen during a reaction, and as time passed a gradual disappearance of the deposit and a healthier appearance of the ulcer were noted, until its complete cure; and in some cases the tubercular laryngitis healed fully when the lung condition was such as to make ultimate recovery hopeless. As to whether the small doses have any direct effect in the destruction of bacilli I am not decided. However this result is accomplished, I found the same lessening of number and degeneration of form, with final disappearance, in other cases as in my own.

I would not create the impression that I consider these results as due to the tuberculin alone. The patients cited have had the help of a good climate, have been treated with the pneumatic cabinet, and have been watched over carefully as to diet and exercise. I give full credit to all these influences. The pneumatic cabinet was, I am sure, of help to me and to others in dilating collapsed air-cells and in strengthening the respiratory muscles. The judicious man-

agement of the patient in regard to rest and exercise is, I believe, of greater importance than many of the profession realize. Exercise too long continued or too violent wrecks the chances of many patients. They require constant oversight to keep them from overdoing, and at the same time to persuade them to take sufficient exercise. As to myself, I think I approximated a perfect course. When I was at the worst I did almost nothing avoidable, but made rest my prime object. As soon as I was able, I did some walking or riding every day, increasing the amount as my strength increased, but stopping before I was in the least fatigued, and always carefully avoiding violent heart-action.

The influence of a good climate in overcoming phthisis is unquestioned, though the amount of credit it deserves in my case is problematical. For nine years I have lived on the Cumberland Plateau, in Tennessee, at about the same altitude and latitude as Asheville, and there I contracted the disease.

In common with every one who has any knowledge of phthisio-therapy, I have always been keenly alive to the value of good nutrition: it is a *sine qua non* in recovery from consumption. Since I first suspected such trouble, I have been careful to keep my digestion good and to use nutritious food; so my diet was chiefly of meat, eggs, and milk before, as after, I came to the Sanitarium. To neglect nutrition would be like a general going into battle neglecting powder and ball. Nothing that will make for the better can be neglected in the fight against consumption. I realize to the full what can be accomplished by good climate, good diet, and careful attention to rest and exercise; yet I know that when all care and wisdom have been exercised in these directions, statistics still show a woful fatality, and that these statistics have been decidedly improved by the use of tuberculin, combined with all these other means.\* And I further know that in my own case all these precautions and methods, employed, as I think, with intelligence born of careful investigation, were insufficient and were failing me. With my own senses I have observed the effect of the tuberculin in many patients; I have seen results obtained, *as a rule*, that are exceptional under any other treatment. In view of all this, I can but credit tuberculin with an important part in my own recovery and in the gratifying results I saw obtained in the large majority of my fellow-patients.

\* See THERAPEUTIC GAZETTE, June, 1893, p. 369.

# TRACTION IN THE TREATMENT OF HIP-JOINT DISEASE.

BY JAMES K. YOUNG, M.D.,

Instructor in Orthopædic Surgery, University of Pennsylvania;  
Attending Surgeon, Orthopædic Department,  
University Hospital, etc.

SO much confusion has existed in regard to the principles of the treatment of chronic joint-affectations, especially the hip-joint, that it is gratifying and encouraging to observe the growing tendency to recognize certain principles as essential and to disregard or exclude others as secondary or unimportant. The principles of joint therapeutics were three,—immobilization, fixation, and traction.

Much importance was formerly attached to immobilization, but as this was found to be impracticable, the modern term fixation has been adopted by all, and the only difference of opinion of late has been in regard to the use, value, and method of the application of traction.

The true value of traction is not admitted by all, but every year witnesses its more general adoption, until its establishment as the first principle of correct orthopædic practice appears to be only a matter of time.

In a recent brochure, Stillman\* has reviewed, entirely without prejudice, the principles involved in the different methods employed by the leading authorities.

This may be taken as representing the general trend of methods among leading surgeons; and while it will be found that almost all use bed traction in some form during recumbency, when apparatus is applied permitting locomotion, five employ fixation without traction against fourteen who employ traction apparatus of some kind.

It is gratifying to note that the so-called physiological treatment of Hutchinson, of crutches and a high shoe upon the healthy limb, without any form of apparatus, and the so-called expectant plan of treatment of Knight, or no treatment at all, except during the exacerbations, are becoming obsolete. I say are becoming obsolete, because I thought these methods had been abandoned until a week ago, when my attention was called to a little patient treated by the former method. As Gibney says, "Whenever one can feel assured that he has a genuine case of chronic articular ostitis of the hip, science demands, humanity demands, that the so-called expectant methods should form no part of the

treatment. This rule admits of few exceptions."

The advantages of the traction methods are threefold,—

1. A diminished number of abscesses.
2. A shorter time for cure.
3. A perfect recovery.

1. A comparison of the methods employed beyond the seas with our own shows a much larger number of abscesses in the transatlantic as compared with the cisatlantic statistics.

This has been particularly referred to by Bradford and Lovett† and the writer elsewhere,‡ and it is unnecessary here to refer to it in detail.

2. If traction methods are continuously employed from the beginning to the end of treatment, a shorter time will be required, both on account of the earlier relief, the rarer relapses, and the diminished frequency of abscess deformity and other complications.

3. With continuous traction methods perfect recovery may be more confidently expected in a large number of cases for the same reasons. To be sure, different types of disease must be recognized, and this the writer has granted on several occasions,§ and has even gone so far as to classify the different types of disease met with in the hip-joint.|| But granting all this, the most favorable type will be conducted to the most favorable termination more quickly and with a more perfect result by the use of traction methods than by any other method. This is well exhibited in some cases already reported by the writer,¶ in which perfect motion, a fraction of an inch of shortening, and no deformity—ideal results—were exhibited.

The question of how to accomplish continuous traction can best be answered by informing you as to my own methods and by the description of methods which may be employed anywhere by any one. The plan of treatment employed in private cases and cases well under control consists of four parts: (1) bed traction, (2) the use of a traction splint and crutches, (3) the traction splint alone, (4) and the traction splint as a protective splint.

1. Bed traction may be employed, as in the ordinary Buck surgeon's adhesive plaster method for fracture of the femur, with which all practitioners are familiar, or, what I prefer, the Sayre extension, made of heavy adhesive plaster (made

† "Orthopædic Surgery," 1891.

‡ "Treatise on Orthopædic Surgery," 1894.

§ In Philadelphia County Medical Society, January 11, 1893.

|| *Medical News*, April, 1894.

¶ *University Medical Magazine*, August, 1893.

\* Stillman, "The Modern Treatment of Hip-Disease." Geo. S. Davis, 1891.

by Maws, of London, or Shivers, of Philadelphia). This is cut so that there are five pieces radiating from the narrow end, to which the buckles are attached. (Fig. 1.) It is applied by

FIG. 2.

FIG. 1.



Adhesive plaster cut  
for extension.

Extension adhesive plaster  
applied.

lacing and crossing these ends over each other up the limb, and is secured with a muslin bandage. (Fig. 2.) By means of a short leather strap from three to six pounds' extension is made. Bed extension is only employed during acute exacerbation, and only for a limited period,—for one or two weeks.

2. The traction splint is adjusted, as described in all systematic works, by securing the waistband, buckling the perineal straps, attaching the straps of the foot-piece to the leg extension, and by means of the ratchet and key making extension until a comfortable amount of traction has been made. Motion should be restricted at the pelvic joint, and the apparatus must be applied and traction made in the direction of the axis of deformity. If the case has been treated thoroughly and efficiently from the commencement of the attack, deformity will be avoided, or, if an acute attack occurs, with pain, flexion and adduction of the limb, the patient should be at once placed in the recumbent position until it has subsided. The foot-piece should extend below the shoe on the diseased side sufficient to allow the foot to swing clear, and a high shoe should be worn on the sound limb, sufficiently high to allow the brace to swing clear (about three inches) when the child walks on crutches. The brace-crutch treatment is employed until all evidence

of acute disease has disappeared, or for from six to eight months.

3. At the end of this period the crutches are discarded, and a shoe about one and a half inches high is worn on the sound side to equalize the length of the limbs, and the child walks on the traction splint. (Fig. 3.)

FIG. 3.

Traction splint applied as in third part of author's plan  
of treatment.

4. After a variable period, ranging from one to two years, the high shoe is altogether discarded and the foot-piece is fitted close to the shoe of the affected side, the perineal straps are loosened, but still worn, and the patient continues the use of the traction splint as a protective brace only. This should be worn for at least a year after the cure has been established, to prevent relapse. Throughout the entire period general constitutional treatment should be employed, varying the drugs with the seasons and the caprice of the patient, and local counter-irritation should be used during all but the last stage, during which period massage will be found most serviceable. The whole treatment will extend over a period of from two to four years.

For general use by practitioners who are unable to have special apparatus manufactured to suit each case, a simple and efficient plan of traction would be of interest. This may readily be accomplished by means of a modified plaster cast.

The adhesive plaster strips are first applied. The entire limb on the affected side should be thoroughly padded with cotton batting, secured by a roller from the malleoli to the waist. This is best applied in the vertical position, with the patient standing on a chair and the limb swinging clear, or, better, resting

on an inverted basin, with the buttocks close to the edge of the bed and an assistant making firm traction. Before completing the cast, six buckles are incorporated in the dressing, two front and back, each over the spinous processes,

FIG. 4.

Author's modified plaster cast traction splint.

and one about three inches above each malleolus. These may be attached to strips of tin, leather, or webbing. The cast may be strength-

FIG. 5.

Author's modified traction splint applied.

ened by strips of tin, or wood bandage. It is then trimmed out around the perineum, and may be made removable by splitting down

the front, binding, and adding eyelet-hooks. Two perineal strips are attached to the buckles above and the extension strips are secured below, and by these means any amount of extension may be made. (Fig. 4.)

A cheap wooden patten on the sound foot (worth about forty cents) and a pair of crutches (worth from twenty-five cents to two dollars) complete an outfit with which hip-joint disease may be treated scientifically. (Fig. 5.)

No provision is made for deformity, as any change in the position of the limb is to be considered as indicative of the commencement of an exacerbation, and demands immediate recumbent bed extension until it has been overcome.

If, by means of this simple apparatus, the simplicity, principle, and importance of traction methods in the treatment of joint-disease become more generally recognized, the object for which this article was written will have been accomplished.

#### TRIKRESOL AS AN ANTISEPTIC FOR COLLYRIA.

BY E. A. DE SCHWEINITZ, PH.D.,  
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Chemistry, Columbian Medical College, Washington, D.C.

THE value of the cresols, or of preparations of the same substances, as antiseptics, was first pointed out in 1889 by Fränkel,\* and subsequently Hueppe,† Hammer,‡ Paradies,§ Gruber,|| and others have emphasized their importance. More recently attention has been called to trikresol, which is better and less injurious than carbolic acid, by Liebreich,¶ Charteris,\*\* and Dr. Reed, of the Army Medical Museum of Washington, D.C. It is considered three times as efficient as carbolic acid.

The frequent contamination of collyria with harmful bacteria has been pointed out by Francke and others, and again emphasized by recent papers which I have prepared in

\* *Zeit. f. Hygiene*, 1889, vi. 521.

† *Berl. Klin. Woch.*, 1891, xxviii. p. 1094; i., 1893; xxx. p. 494. Tr. Inter. Cong. Hyg. and Derm., 1892, ii. p. 263.

‡ *Archiv f. Hygiene*, 1892, xiv. p. 116.

§ *Viertel. f. Gerichtl. Med.*, Berlin, 1892, iv. Suppl. Heft 131.

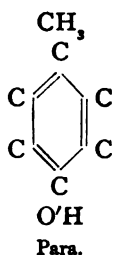
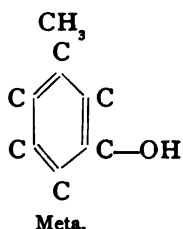
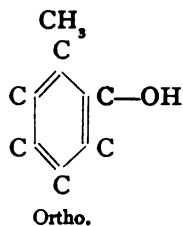
|| *Internat. Klin. Rundschau*, Wien., 1893, Band vii. p. 788; *Archiv f. Hygiene*, 1893.

¶ *Therapeutische Monatshefte*, January, 1894.

\*\* *Lancet*, 1894.

conjunction with Dr. G. de Schweinitz.\* Up to the present time the chemical sterilization of such solutions has been rather unsatisfactory, owing to the strength of the carbolic acid, corrosive sublimate, or mercury cyanide which must be used to insure disinfection; hence it occurred to me that trikresol might be useful.

Trikresol is a mixture of the ortho-, meta-, and para-methyl phenols, or ortho-, meta-, and para-kresols, and contains the hydroxyl group, which seems to be a characteristic of antiseptics and germicides. Its irritating action is restrained, although its disinfecting properties are not interfered with, by the presence of the methyl group in the molecule.



To test its value in the desired connection, I first made up a solution of trikresol with ordinary Potomac River water (1 to 500 and 1 to 1000). After forty-eight hours the Potomac water (1 to 500) gave no growth when inoculated in peptonized beef-broth; the 1 to 1000 solution gave no growth on the fourth day. A solution of 1 to 1000 with distilled water, inoculated in peptonized beef-broth, agar, and potato, yielded no growth after thirty minutes.

The effect of this trikresol solution upon the

eye was tested by dropping it into a rabbit's eye, and also by injecting  $\frac{1}{10}$  cubic centimetre into the anterior chamber. Dropping the solution into the eye produced not the slightest irritation. The injection of the 1 to 500 solution caused moderate reddening above the point of puncture, which disappeared without any general inflammation in two days. Injection of a 1 to 1000 solution produced very moderate hyperæmia of the blood-vessels in the ciliary region, just above the point of injection; not more, however, than might be expected from simple puncture of the cornea, and this disappeared within twelve hours. These observations were made with the naked eye, without the use of the ophthalmoscope.

It seemed, therefore, that the 1 to 1000 solution might be used for the preparation of the collyria. The three drugs most liable to contamination in a short time are cocaine, atropine, and eserine, and of these solutions were made in the following strengths: hydrochlorate of cocaine, four per cent.; eserine, one grain to the ounce; atropine, four grains to the ounce. Trikresol water was used as the solvent. These solutions were placed in ounce glass-stoppered bottles, no particular care being used to protect them from dust, and they were allowed to stand for a week in a loosely-closed closet in the laboratory. At the end of this time the bottles were opened without flaming their mouths, and cultures made from the solutions, but no growth appeared upon the media. The bottles were then allowed to stand uncorked for a week in a closet which stood just in front of the window. This closet was opened four or five times a day, and no care was taken to prevent contamination with dust. At the end of this time the collyria were still clear, and cultures from them showed no growth. The next day happened to be a breezy one, and as the door of the closet was open, the dust from the street had free access to the open bottles. Though the solutions themselves still appeared unaffected, cultures from the eserine and cocaine yielded a slight growth, but the atropine remained sterile. This test was much more severe than any to which the collyria, preserved even with the slightest care, would be submitted.

The pipettes belonging to these several solutions were rinsed out twice with the 1 to 1000 solution of trikresol, and then inoculations made by rinsing them with sterilized beef-broth. No growth resulted. After rinsing them again with the trikresol solution, they were allowed to lie in open, wide-mouthed bottles for some time, and subsequently used to

\* THERAPEUTIC GAZETTE, September 15, 1893, and Transactions of College of Physicians, Philadelphia, March, 1894.



transfer the collyria to the culture-tubes. Again no growth was produced.

The effect of the solution, in this instance made from eserine, was tried on a rabbit's eye without causing any inflammation.

Trikresol water (1 to 1000) dropped into my own conjunctival cul-de-sac failed to cause the slightest burning or the least inflammation.

I would suggest, therefore, that it would be advantageous in making up collyria to use trikresol water (1 to 1000). In addition to the usual solutions kept in the ordinary treatment case, there should also be a small vial of trikresol water for rinsing the pipettes after use. By this method I think that the fungus and bacterial growths often found in collyria might be prevented, as well as any eye-complications resulting from the use of a contaminated solution. These collyria have now been prepared for three months, and no growth, fungous or otherwise, is apparent in any of them, and no growth is yielded by cultures.

In many cases the trikresol solution 1 to 500 could be used more advantageously than the 1 to 1000. When dropped into my own eyes the 1 to 500 solution produced no burning sensation whatever. As trikresol has been found to be such a good antiseptic and is fatal to the pyogenes aureus, it would doubtless prove very useful in general ophthalmological practice.

*THE NON-OPERATIVE METHODS OF  
TREATING ANAL FISSURE OR  
IRRITABLE ULCER OF  
THE RECTUM.*

READ BEFORE THE AMERICAN MEDICAL ASSOCIATION,  
JUNE 7, 1894.

BY LEWIS H. ADLER, JR., M.D.,  
Professor of Diseases of the Rectum, Philadelphia Polyclinic  
and College for Graduates in Medicine; Surgeon to the  
Charity Hospital, etc., Philadelphia, Pa.

WHEN anal fissure is of recent origin and not associated with much spasm of the sphincter muscles, there is a fair prospect of cure without operative procedure.

This statement is made advisedly and in the face of a criticism, published in *Mathew's Medical Quarterly*,\* of the writer's brochure ("Fissure of the Anus and Fistula in Ano" †), in which the following statement is made: "It is a pity that this admirable little work wastes so much time in discussing the palliative (?) treatment of the disease [fissure]."

"An affection so simple in its etiology and

pathology, and that can be so quickly and radically cured by divulsion of the sphincters, it seems a great loss of time to talk about applying ointments, when it is a recognized fact that not one case in ten is ever benefited by their use."

I do not doubt but that the reviewer quoted honestly expressed himself in the statements made; and, furthermore, that the opinion given—that not one case in ten is ever benefited by other means than operative measures—is based upon personal experience. But I must be pardoned for dissenting from the same views, as my experience, while not an extensive one, is ample to justify a more conservative treatment of many of these cases.

I am well aware that the operative treatment of fissure is a simple procedure, and that the disease is quickly cured by its execution; but I am likewise conscious of the fact that many persons object strenuously to any operation.

No matter how trifling its import be to the surgeon, an operation to the patient is something which is dreaded, and it behooves the practitioner to remember that the majority of persons are unwilling to submit to operation until they are personally convinced that such a course is the ultimatum.

It is my purpose in presenting this paper to indicate how over seventy-five per cent. of the cases of fissure of the anus which have come under my observation, both in hospital and private practice, have been cured by non-operative measures. No less an authority than Allingham ‡ states that the curability of this lesion does not depend upon the length of time during which it has existed, but rather upon the pathological changes it has wrought. He also adds that he has cured fissures of months' standing by means of local applications, where the ulcers were uncomplicated with polypi or hemorrhoids, and where there was not any marked spasm or thickening of the sphincters.

It is essential to the success of the treatment of fissure by local applications that rigid cleanliness of the parts be maintained; for this purpose the anus and the adjacent portions of the body should be carefully sponged night and morning and after each stool with tepid water. It is also highly important that attention be given to the condition of the patient's bowels. Regularity of habit should be established, and the evacuations rendered semi-fluid, as figured or hard stools materially aggravate the symptoms.

\* January, 1894, vol. i., No. 1, p. 185.

† "Physician's Leisure Library Series," 1892. Geo. S. Davis, Publisher, Detroit, Mich.

‡ "Diseases of the Rectum," fifth edition, 1888, p. 215.

To accomplish these purposes, enemata or mild aperients should be employed, and the diet must be regulated, the use of bland and unirritating food being enjoined.

All drastic purges should be avoided, as they are more or less irritating to the extremity of the rectum. To establish a daily evacuation of the bowels and to render the movement as painless as possible, I am in the habit of ordering an enema of warm water, or one of rich flaxseed tea, say from half a pint to a pint, to be administered every evening, preference being given to the night-time, as then the patient can assume the recumbent posture, which, combined with the rest, affords the most relief from subsequent pain.

If the first enemata should prove ineffective, it should be repeated in half an hour. In order to relieve the pain and spasm of the sphincters attending the evacuation, it is well to use a suppository about half an hour before the injection is employed, consisting of,—

R Ext. belladonnæ, gr.  $\frac{1}{2}$  ad  $\frac{1}{2}$ ;  
Ext. opii aq., gr.  $\frac{1}{4}$  ad  $\frac{1}{2}$ ;  
Ol. theobromæ, gr. x.  
Misce et fiat suppositoria i.

Or an ointment of conium may be used, as recommended by Mr. Harrison Cripps.\*

R Ext. conii,  $\mathfrak{z}$ ii;  
Olei ricini,  $\mathfrak{z}$ iii;  
Ung. lanolini, q. s. ad  $\mathfrak{z}$ ii.

A small quantity of this ointment should be smeared on the part five minutes before expecting a motion and again after the bowels have been moved.

In applying any of the various local remedies to an anal fissure it is necessary first to expose the ulcer to view, which can be done by means of the operator's or his assistant's fingers, and to anæsthetize its surface with a four-per-cent. solution of the hydrochlorate of cocaine, well brushed in with a camel's-hair pencil or with a piece of cotton attached to a probe. The application of the cocaine may have to be repeated once or twice, at intervals of three or four minutes, in order to obtain the desired anæsthetic effect. If any ointment has been used about the fissure, the anus should be subjected to a hot-water douche before using the cocaine, as this drug will not exert its anæsthetic influence on a greasy surface.†

Among the different remedies that have been used in the local treatment of fissure of the anus may be mentioned the following: Nitrate of silver, acid nitrate of mercury, fuming nitric acid, carbolic acid, sulphate of copper, the actual cautery, and chloral hydrate.

Of these topical applications, the nitrate of silver is the best. Its effects are various: it lessens or entirely calms the nervous irritation which is so important a factor in producing spasmodic contraction of the sphincters; it coats and shields the raw and exposed mucous surface by forming an insoluble albuminate of silver; it destroys the hard and callous edges of the ulcer, and tends to remove the diseased and morbid action of the parts.

The form in which I usually employ this salt is in solution (from 10 to 30 grains to the ounce). The stick caustic may be also used.

To accomplish the best results, the solution should be used once in twenty-four or forty-eight hours, according to circumstances. It may be applied by means of cotton attached to a silver probe or to a piece of wood.

The application is made by separating the margins of the anal orifice with the thumb and index finger of the left hand, and introducing into the anus the probe charged with the solution. The argentic nitrate is to be applied to the fissure only; a few drops are all that is required. If thorough local anæsthesia has been induced by the use of cocaine, the application of the silver salt produces little, if any, suffering, for, by the time the anæsthetic has lost its effect, the otherwise acute pain of the nitrate of silver will have passed away.

After each application the part should be smeared well with an ointment of iodoform (30 grains to the ounce). The odor of that drug may be disguised by the addition of a few drops of attar of roses. Iodol may be used instead and in the same way, but I prefer the iodoform, owing to its anæsthetic qualities.

After the ulcer has been touched once or twice with the silver solution, the effect will be, in the cases that are benefited by this treatment, a considerable mitigation of the pain from which the patient suffered when at the closet and afterwards, and the sore will present a healthy, granulating appearance, and will slowly contract in size.

Unless the fissure be complicated with some other affection in children and in young persons, anal fissure is almost always curable by adopting the mode of treatment laid down.

Some authorities speak highly of the use of the acid nitrate of mercury, fuming nitric acid, carbolic acid, the actual cautery, etc., but in

\* "Diseases of the Rectum and Anus," second edition, London, 1890, p. 189.

† W. P. Agnew, M.D., "Diagnosis and Treatment of Hemorrhoids," etc., second edition, San Francisco, Cal., 1891, p. 91.

my opinion their employment is attended with more suffering than follows the use of the nitrate of silver. Furthermore, the application of these remedies is not so certain to effect a cure, so that I rarely resort to their use.

The daily introduction of a full-sized bougie, made of wax or tallow, will sometimes act beneficially in cases of fissure by stretching the sphincter and producing such an amount of irritation as will set up a healing process in the ulcer. An application of cocaine or of belladonna ointment should be made to the part previously to their employment.

In the treatment of anal fissure, Allingham strongly advocates the local use of the following ointment:

R Hydrarg. subchlor., gr. iv;  
Pulv. opii, gr. ii;  
Ext. belladonnæ, gr. ii;  
Ung. sambuci, ʒi. M.  
Sig.—To be applied frequently.

He states that he has had many cures with this ointment alone. Another excellent ointment recommended by this same authority is,—

R Plumb. acetatis, gr. x;  
Zinci oxidi, gr. x;  
Pulv. calaminæ, gr. xx;  
Adipis benzoïnât., ʒss. M.

An ointment of the oxide of mercury (30 grains to the ounce) has cured many cases.

In conclusion, I would emphasize the fact that in many cases anal fissure, when uncomplicated with some other rectal affection, is curable by means of non-operative methods of treatment.

1610 ARCH STREET.

#### THE TREATMENT OF ERYSIPELAS.

By J. M. ANDERS, M.D., PH.D.,

Professor of Medicine, Medico-Chirurgical College, of Philadelphia.

THE subject of the treatment of erysipelas falls naturally into three subdivisions: 1, dietetic treatment; 2, constitutional; 3, local.

1. *Dietetic.*—The proper attention to the diet is of first importance. It must be generous and composed of highly nutritious articles. If the temperature be high, liquid forms of nourishment alone should be administered, giving them in small quantities at definite, short intervals. Rectal alimentation should be resorted to if the stomach rejects a suitable dietary. Based on considerable practical experi-

ence, I have been convinced of the fact that liberal feeding is of greater service to the patient than any recognized form of medicinal treatment.

This method, pursued from the onset of the attack, will not only serve to render the course of the disease more favorable than if less energetically fed, but will also lessen the liability to the more frequent complications.

Erysipelas is, as shown elsewhere, a self-limited disease, in uncomplicated cases, when occurring between twenty and fifty years of age. In such the necessity for vigorous alimentation is not greater than in other acute infectious diseases having a comparatively short course. Relapses occur in eleven per cent. of the cases, and lack of attention to the patient's diet during the primary attack does unquestionably increase the frequency of their occurrence.

When the disease occurs in persons over fifty years, when complications arise, and when the vital processes have been lowered on account of previous chronic disease, such as chronic nephritis, chronic phthisis, organic disease of the heart, etc., the course is much more protracted. The fact that these chronic affections also increase the receptivity of the human organism to the specific germ of erysipelas, as well as the mortality-rate, must be recollected. Now, it is in the classes of cases just mentioned, or in those in which the duration is prolonged, that correct alimentation is of paramount advantage, fortifying the vital functions, thus abridging the course of the affection.

And since death is directly ascribable to exhaustion, with few exceptions in these instances, the life of the patient is thus frequently savable. Again, when nourishment is exhibited judiciously, stimulants are required but rarely.

There can be no question but that the typhoid state of the system met with in this and other acute infectious diseases is often attributable indirectly to hyponutrition. I fear we have come to rely too much upon the local and constitutional agents in the management of this disease, to the neglect of proper dietetic means, a more potent factor.

2. *Constitutional.*—When, however, despite appropriate diet, the pulse becomes feeble, the first sound of the heart indistinct, and the tongue dry, undoubted indications for the use of stimulants are present and must be heeded. When needful they should be given with a comparatively free hand. Stimulation is most apt to be required in aged and enfeebled patients suffering from the disease. I frequently

order to be taken from sixteen to twenty ounces of whiskey or brandy daily in divided portions.

The promptness with which strychnine acts leads me to place it among stimulating agents in the first rank in these cases. In marked gastric irritability, champagne is to be preferred. Numerous antiseptic remedies have been recommended, but they have not been, up to the present, available in doses large enough to be of decided advantage. In view of the fact, however, that the disease is known to be caused by the streptococcus of Fehleisen, further trial of antiseptic agents should be made. I have been for a decade or over exhibiting to erysipelas cases bichloride of mercury in moderate-sized doses throughout the febrile stage, and have found some degree of amelioration of the symptoms as the result.

The tincture of chloride of iron, first used extensively by English authorities, was formerly regarded by most clinicians as a truly specific remedy; perhaps the majority of authorities no longer accept this dictum. The profession, as the result of abundant experience, are, for the most part, of the belief that other preparations of iron are at least equally efficacious. While engaged recently in making a collective investigation into the etiology, complications, mortality-rate, etc., of erysipelas, many facts relating to the treatment of this disease were met with and noted. They were taken from the records of several hospitals in Philadelphia. In this connection reference will be made to points bearing upon the internal treatment alone, the local treatment being discussed subsequently. Through the kind assistance of Dr. Morris Booth Miller, important data were obtained from the records of the Pennsylvania Hospital; the cases had been under the care of Drs. Lewis, Da Costa, Longstreth, Meigs, and others. From the year 1872 to 1876 inclusive there occurred in this institution seventy-four cases of erysipelas which were treated by the use of the tincture of the chloride of iron alone (the average quantity being one drachm daily in divided doses), with three deaths, or a mortality of four per cent. Of these, thirty-six were so-called idiopathic cases and thirty-eight traumatic, those proving fatal being idiopathic. The ages of those who died were sixty-six, forty-nine, and twenty years respectively; the immediate cause of death was noted as exhaustion in the first two instances. No complications were recorded in the first instance, but extensive bed-sores developed in the third, while the second fatal case (aged forty-nine) developed œdema of the glottis.

Twelve of the cases reported from the Johns Hopkins Hospital were treated with iron and stimulants, the results being about the same as in those reported from the Pennsylvania Hospital.

From 1877 to 1892 inclusive some of the erysipelas cases in the Pennsylvania Hospital were treated by other methods, which will be spoken of presently. In sixty-six cases, however, during the latter period iron alone was administered. A single death occurred, and in this instance the fatal termination was due to œdema of the glottis. Forty-eight cases were classed as idiopathic and eighteen as traumatic. It is quite probable that during the period in which this series of instances occurred, iron was depended upon only in the milder forms of the complaint, for the following reasons: In the first place, quinine was exhibited with the iron in very many instances, and here the percentage of deaths was, as shown hereafter, quite high. In explanation of this fact, we find that quinine was combined with iron in all of the severer types of the affection. That quinine is to be justly held responsible for the increased mortality (which occurred in the cases in which it formed a part of the internal treatment) is altogether unlikely. The value of iron is more reliably shown by the first group of seventy-four cases (above mentioned) than by the second, consisting of eighty-four cases, since in the first group *all* of the cases, during the period from 1872 to 1876 inclusive, were treated by this remedy singly, while the death-rate was only four per cent. These are favorable results when the status of the vital powers of hospital patients in general is kept in remembrance.

I have shown elsewhere\* that the general average mortality-rate in hospitals is 6.57 per cent.; in private practice, 4.16 per cent. Not a few of the seventy-four cases treated by iron alone manifested complications, and since some of these modify unfavorably the prognosis, they should be mentioned here.

In thirteen there were abscesses (though it has been shown that this complication does not augment the death-rate to any extent), in two delirium tremens occurred, in two general articular rheumatism, and in one scurvy. As pointed out in a previous paper, pre-existing chronic affections render the outlook gloomy, but we find that one of the cases developed in the course of chronic pulmonary tuberculosis,

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\* "The Complicating Conditions, Associated Diseases, and Mortality-Rate in Erysipelas" (*International Medical Magazine*, October, 1893).

another in a hemiplegic, both of which, however, recovered under iron.

The number of cases treated by iron and quinine in combination, from 1877 to 1892 inclusive, was eighty-one; and of these, fifty-five were idiopathic and twenty-six traumatic. The average daily dose of quinine administered was from 12 to 16 grains. Ten cases proved fatal,—a mortality of 12.3 per cent. The cause of death in two instances was acute Bright's disease, in two delirium tremens, one pyæmia, one exhaustion during fourth relapse, one co-existing leg ulcer, and one cerebral sclerosis and bed-sores.

The complications noted from which recovery ensued (while being treated with iron and quinine) were three suppurative otitis media, three abscess of the eyelids, two delirium tremens, and bronchitis, sciatica, diarrhoea, acute nephritis, broncho-pneumonia, lobar pneumonia, iritis, abscess of foot, tonsillitis, angina pectoris, and mastoiditis and fracture of the skull, one each; one instance arose during convalescence from typhoid, ending in recovery. When such facts as the gravity of the type of the present series and the character of the complications are kept in remembrance, the high mortality on the one hand and the apparent inefficacy of these remedies in combination on the other hand, need excite no surprise. My own experience in the use of quinine in erysipelas has been quite encouraging. During the past decade I have employed it in not less than twenty-four cases, its use being confined to instances in which the temperature touched 103° F. With a single exception, in uncomplicated cases (eighteen in number) the nocturnal remissions were decidedly greater and the evening exacerbations less marked. In every instance iron in some form (usually the tincture of the chloride) was administered simultaneously.

During the years from 1881 to 1892 inclusive, twenty-six cases were treated in the Pennsylvania Hospital by the use of pilocarpus, quinine being also associated in four of the cases and in two iron. There were seventeen of the idiopathic and seven of the traumatic variety, while the complications consisted in, one delirium tremens, one acute articular rheumatism, one diarrhoea, and in two a relapse occurred; none of these proved fatal. These results create a favorable showing for pilocarpus, but it is to be stated that in but few cases were there manifested serious complicating conditions.

Pilocarpus tends to produce increased nocturnal fall of temperature. The fact, however,

needs to be emphasized that there is a strong disposition to spontaneous nocturnal remissions in temperature in this disease. Professor J. M. Da Costa first used pilocarpus in erysipelas at the Pennsylvania Hospital. His experience soon showed clearly that when given in the very early stage, in  $\frac{1}{6}$ -grain doses hypodermically, repeated three or four times, at intervals of two or three hours, it often aborted the attack.

If we except its use to abort the affection, it is only in cases attended with high temperature without decided morning fall that pilocarpus should be employed.\* As a guide to the administration of this drug, the conditions of the pulse and the heart can be relied upon. Pilocarpus, then, deserves a permanent place in the therapy of erysipelas.

But, though I have been unable to obtain complete data showing the treatment and its results from the records of the Philadelphia and Episcopal Hospitals, the facts, so far as ascertainable, indicate that for twenty years the tincture of the chloride of iron in large doses has been most frequently used with the same good results as at the Pennsylvania Hospital. Quinine has been another favorite, administered in doses of 2 grains every three hours, or 10 to 15 grains once or twice daily.

In twenty-four cases, gathered from various sources, ergot gave decidedly favorable results.

*The Treatment of Severe Symptoms.*—Of drugs, as antipyretics, phenacetin, acetanilid, and antipyrin have been used at the Philadelphia Hospital,—a method of practice which I regard as being fraught with grave consequences. The best mode of reducing temperature is by means of cold sponges and cold or cool baths. The ice-bag applied to the crown of the head lowers temperature and simultaneously allays delirium and nervous excitement. For the marked nervous phenomena, such as pain, sleeplessness, and active delirium, hyoscine hydrobromate,  $\frac{1}{100}$  grain hypodermically, has been tried in numerous instances at the Medico-Chirurgical, Pennsylvania, and Philadelphia Hospitals, and has given promise of being a valuable remedy. It should not be employed where the heart-power is found to be greatly deficient. To fulfil the same indications, the following remedies and recipes, named in the order of their value and importance, have been utilized: Sodii bromidi, 5 grains every two hours or 20 to 30 grains at night; morphine ( $\frac{1}{8}$  grain) and chloral (10 grains) in combina-

\* It has been used by myself and others to a considerable extent at the Philadelphia Hospital for its antipyretic effect.

tion every half-hour for three doses; potassii bromidi (10 grains) and tinctura cannabidis indicæ (10 minims) at bedtime; atropine ( $\frac{1}{80}$  grain) and morphine ( $\frac{1}{16}$  grain) hypodermically.

3. *Local*.—Local measures have always held a prominent place in the treatment of erysipelas. The list of agents which have been used topically is long and embraces all classes of therapeutic substances. Thus, in the three series of cases before cited, which were treated at the Pennsylvania Hospital, together with a few collected from other sources, no less than fifty different remedies and preparations have been employed. Among those most frequently used were: elm in thirty-seven cases, lead-water and laudanum in twenty, subcutaneous injections of carbolic acid (1 to 40) in eighteen, oxide of zinc in fourteen, corrosive sublimate in solution in fourteen, vaseline or cosmoline in thirteen, solution of bicarbonate of sodium in nine, and benzoated zinc ointment, cocaine with laudanum, and ichthyol ointment with lanolin in eight each. Among the many measures of which trial has been made in a smaller number of instances are: collodion, glycerin, laudanum, unguentum potassii et belladonnæ, unguentum plumbi, liquor acidi carbolic, liquor chloralis, liquor sodii hypsulphitis, liquor sodii sulphatis, aqua calcis, mistura olei lini et bismuthi, unguentum sulphuris, mistura etheris et camphoræ (employed until a distinct coat is obtained), iodoform (and dry gauze) once daily, together with such simple and yet curiously varied measures as, dust affected parts with flour, zinc and starch, sassafras, apply hot flaxseed poultices (every two hours), cold-water cloths, warm-water cloths, ice-bag, wet cloths, lotions, and so on.

I have mentioned a large number of external applications,—by no means all of them,—at the risk of exhausting the patience of my hearers, for the express purpose of showing thereby the highly unsatisfactory condition which has characterized the local treatment of this disease down to the most recent times. Doubtless many of the preparations before mentioned were prescribed for their effect in excluding the air. To my mind this is a leading indication, and to meet it I prefer carbolized vaseline or cool carbolized oil.

A knowledge of the microbic nature of erysipelas has led to the employment by the profession of various antiseptic drugs and their application in various ways. I do not doubt that it is along this line that the greatest advances are to be expected. Allusion has been

made to the injection of carbolic acid. Here the aim is to check the spread of the inflammatory process by inserting the needle at numerous points just beyond the inflamed border. This method, introduced by Heuter, has been much practised by Henry at the Philadelphia Hospital, and more recently by Osler at Johns Hopkins Hospital. The success thus attained is encouraging, and the method is especially applicable in erysipelas migrans. As before stated, the solution of the bichloride of mercury (1 to 4000) was used locally in fourteen instances, and to these I can add the results of twelve others treated at the Medico-Chirurgical Hospital and in private practice. It may be applied in the form of lotions to the inflamed surface, or it may be injected beneath the skin, just beyond the border of the inflamed area, as in the case of carbolic acid. Quite recently it has been recommended to scarify the affected part and follow by the application of a solution of mercuric bichloride. This method of treatment I regard as being most promising as well as rational. It was certainly, in three instances in which it was resorted to in my own practice, followed by rather brilliant results, moderating more particularly the severity of the local inflammation.

Dr. Morris Booth Miller observed in the wards of the Pennsylvania Hospital quite uniformly good results from the local use of ichthyol ointment with lanolin, in the service of Dr. Da Costa and others. Before making trial of the corrosive-sublimate solution, I had used ichthyol locally, but the results were not brilliant. Dr. Charles J. Whalen has reported, in a recent issue of the *Journal of the American Medical Association* (April 28, 1894), most strikingly favorable results in four cases of facial erysipelas from the use of external applications of guaiacol,—a mode of treatment which richly deserves a more extended trial.

Lastly, from the results of these statistical investigations into the subject of the treatment of erysipelas, and personal observation and experience, I have arrived at the few brief conclusions following:

1. Proper attention to the diet is of paramount importance.
2. Stimulants are rarely necessary if the dietetic requirements are fully satisfied, but may be freely exhibited when indicated.
3. Of drugs, iron has been widely tested and found to be of great value, though it matters little which salt or preparation is employed.
4. Quinine, when administered with iron, reduces the temperature, supporting at the same time the vital functions.

5. The use of antiseptics *per drem* is to be recommended.

6. Pilocarpus is in a small proportion of cases powerful to abort the affection. To reduce temperature merely, pilocarpus should be employed in intense pyrexia, particularly where the favorable morning remissions do not occur.

7. The question of the local treatment of erysipelas has not as yet been set at rest, but agents intended to exclude the air and such as possess a germicidal power, especially corrosive sublimate, are highly useful.

8. That the erysipelococcus of Fehleisen, which is found chiefly in the more superficial channels of the corium, may be attacked directly by the corrosive-sublimate solution when the latter is used after scarification, is quite probable.

9. In erysipelas migrans, the germicide should be injected beneath the skin, just beyond the edge of the part inflamed.

#### TREATMENT OF HYDROPHOBIA.

BY CHARLES W. DULLES, M.D.

THAT strange mixture of independence and self-deception, Paracelsus, who broke up some traditions which had long acted as fetters to men's minds and with equal ruthlessness trampled under foot what his contemporaries regarded as common sense and common decency, signified the contempt he felt for them and that which they honored by publicly burning the writings of Hippocrates, Galen, and other great physicians of the olden time. Like him, in some respects, are those who in our day ignore or despise the works of the men who worked before them: works with which, for the most part, they seem to be unfamiliar. But he who would justly judge the methods of the present ought to know by what steps they have come to be accepted, and should not assume that the sum of experience which lies behind them is of no value. This is especially true when we consider that curious disorder known as hydrophobia, which Aristotle, of the ancients, first described nearly four centuries before the Christian era as a disease (*lyssa*) which caused in dogs mania, and in all animals bitten by dogs suffering with *lyssa*, mania, *excepting in man*.

The treatment of this disorder has been sometimes rational and sometimes strangely irrational, as have been the views in regard to its nature. Celsus justly called it *miserimum genus morbi*, and suggested a mode of treatment calculated to cure all those in

whom it was a pure psychical disorder. Pliny the Elder reported a large number of senseless and superstitious remedies employed before his time, among them a certain slimy spittle found beneath the tongue of a mad dog, which, taken in drink, was expected to prevent hydrophobia, and the practice of eating—raw, if possible—the liver of the dog that had inflicted the injury. Galen, with his extensive knowledge of drugs, especially recommended the ashes of river crabs burned on a copper plate,—a mild saline remedy; and Cælius Aurelianus recommended bleeding to cure fever, if present, and fear if there were no fever. After this, at various times, there have been recommended the use of oxalis and alysson among herbs, and of antimony and mercury among metals. In 1625, Aromatarius, considering hydrophobia to be a contagious angina, recommended the practice of laryngotomy, curiously anticipating a suggestion made nearly three hundred years later by Rush, soon after Physick had recommended tracheotomy in this disease. Boerhaave recommended bleeding *ad deliquum*, and to blindfold the patient and cast him into a cold pond. Ravely, in 1696, recommended emetics, diaphoretics, diuretics, and purgatives, with mercury and camphor internally. He also proposed the transfusion of arterial blood from a healthy animal, preferring the he-goat for reasons which he states. About this time (1700) Sir Theodore Mayerne proposed to the British public the following interesting procedure, which was calculated not only to serve as a test of the state of a dog suspected to be mad, but also as a curative method in case it was: "Pluck the Feathers from the Breech of an old Cock, and apply it bare to the Bite, and do this upon each of the Wounds. If the Dog were Mad, the Cock will Swell and Die, and the person Bitten will do well; but if the Cock Dies not, the Dog was not Mad. If the Wounds be very small, it is requisite to open them with a Lancet." In the same century Dr. Mead prepared his famous pulvis antilyssus, which in 1721 was inserted in the London Pharmacopœia, and which was regarded by many as a sure cure for hydrophobia. In 1732, Desault, regarding hydrophobia as a disease analogous to syphilis, used inunctions with the "Neapolitan ointment," composed of equal parts of human fat, hog's lard, and mercury. About the same time appeared the famous Ormskirk remedy, made of chalk, Armenian bole, alum, elecampane root, and oil of anise. Robert Whytt, in the eighteenth century, used opium in large doses, and one of his followers gave as

much as one hundred and eighty grains to a patient within twelve hours, with which and other treatment the patient lived just fifteen hours. In 1784, Mattheis, a Neapolitan surgeon, proposed the bite of a viper as a cure of hydrophobia; and four years later Fabbroni reported a case in which he made two vipers bite, one each leg of a man with so-called hydrophobia, who seemed to be relieved for the moment, but died in half an hour. In 1789, Dr. Percival quoted from Abbé Grosier a description of the Chinese serpent-stone, which is what is popularly known as the mad-stone. A good description of such a mad-stone and its uses is to be found in the unpublished correspondence of Dr. Benjamin Rush, now deposited in the Ridgway branch of the Philadelphia Library.

The time of Rush was the time of excessive use of bleeding and mercury. Rush recommended the letting of as much as one hundred or two hundred ounces of blood in order to effect a cure. After this came the suggestion by Rossi of the use of galvanism, while Youatt, the English veterinarian, had an extravagant faith in cauterizing the bites of mad dogs with nitrate of silver, and advised its use even if the constitution had been affected. In 1820, Marochetti announced that he had learned from a Cossack peasant of the Ukraine of the presence of certain vesicles (known as lyssi) beneath the tongue, the excision of which would prevent the outbreak of hydrophobia. This was not a novelty, and it was nonsense, although such serious writers as Trousseau and Doléris have attached some importance to it. About the same time Urban described certain vesicles, which he said were developed at the seat of the bite, and which contained a virus that was inoculable. In 1821, Magendie treated so-called hydrophobia with intravenous injections of warm water. In 1831, Trousseau—then a young man—at the suggestion of Magendie, gave to a patient 36 drops of hydrocyanic acid. By a mistake of the apothecary he administered the strong acid, and the patient died within twenty-four hours. The use of belladonna and atropine was so vigorously carried on in 1862 that Bergéron reported a case of a child, twelve and one-half years old, to whom he gave hypodermic doses of  $\frac{1}{16}$  grain of atropine. In 1866 the *Xanthium spinosum* was brought forward and extravagantly praised as a remedy for hydrophobia, but it soon went the way of all other sure cures.

Among the recently used remedies for hydrophobia are morphine, chloral, curare, cannabis indica, chloroform, nitrite of amyl, electricity,

oxygen, hoang-nan, and pilocarpine. Of these—to save time—I may say that not one commends itself to a critical judgment, except it be cannabis indica and, as we shall see, the combination of chloroform and morphine in carefully-selected cases. A careful study of thousands of cases reported, and of a limited number seen in practice and in consultation, has convinced me that the treatment recommended in text-books, and almost invariably followed in private and hospital practice, is not only useless, but in a great majority of cases very hurtful. Reflection on the records of many cases that I have examined, taken in connection with what I have seen, satisfies me that more patients would recover from attacks of so-called hydrophobia if there were no physicians, than do so now, and certain drugs I have come to regard as of the most hurtful influence. These are morphine, chloral, belladonna, curare, and chloroform. Over and over again I find records of the persistent use of these drugs, without the slightest evidence that they do any good whatever. Preparations of opium seem to increase maniacal excitement, and at a certain point to kill the patient, apparently by accumulation. Curare produces nothing but an apparent peace, caused by paralysis of the muscles, while the mind of the patient continues to be tortured. An example of this may be found in the record of a case reported in the *Lancet* of October 15, 1881. The significant conclusion of this report states that, after an attempt to chloroform the patient had to be discontinued,  $\frac{1}{16}$  grain of curare was administered hypodermically at 4.20 P.M., and that the patient “died quietly at 4.30 P.M., asphyxiated.” Hoang-nan, after a full trial, was abandoned ten years ago. Jaborandi and pilocarpine have followed it into disuse. The use of chloroform was first proposed by Dr. Henry Hartshorne, of Philadelphia, in 1848; and that of nitrite of amyl by Dr. Wm. S. Forbes, of Philadelphia, in 1875. Oxygen was used first in Russia in 1879. Of these three agents, it may be said that they would be of service in cases suitable from the stand-point of the neurologist, but that they cannot have, and do not have, any influence upon a disorder due to the action of a specific virus.

And now let us consider what remains, as a result of a careful consideration of the accumulated experiences of the past, to guide us in determining how any particular case of hydrophobia shall be treated. The first point, of course, is to be sure of the diagnosis. To do this implies a correct notion of the nature of the disorder. Any fair student of the subject



must agree that many cases are reported and treated as hydrophobia which are not caused by inoculation of any virus derived from a rabid animal, but are instances of a variety of diseases in which hydrophobic symptoms occur. This subject I have discussed quite fully in a paper read before the Medical Society of the State of Pennsylvania in 1884, giving a large collection of diseases which may be mistaken for hydrophobia. Each patient supposed to have hydrophobia should be most critically examined from head to foot, omitting no organ whatsoever. Especially should the condition of the ears, the throat, the lungs, the heart, the pericardium, and the kidneys be investigated. Rheumatism should be especially borne in mind, as well as alcoholism, and mania dependent upon central lesions or disorders. Pure hysteria, and that remarkable and horrible form of fright which comes to those who have a dread of impending disaster, must be considered. These things being done, and the presence of a disease independent of any specific inoculation being reasonably excluded, it will be found that the disorder is one whose manifestations are those of a psychosis, and its rational treatment must be such as is appropriate to disorders of this class. Good results are to be obtained only by the use of remedies which are found to be useful by persons of large experience in the management of mental and nervous diseases. One such remedy is *cannabis indica*, to control delirium and hallucinations. This may be given in the form of a tincture or extract, using moderate and repeated doses. The dose of the tincture should be 15 minims and that of the extract  $\frac{1}{4}$  grain, and such a dose may be given every half-hour until drowsiness is produced. The use of hyoscine hydrobromate commends itself upon theoretical grounds. I have no knowledge that it has ever been used in hydrophobia, but its great value as a calmative in various forms of delirious and maniacal excitement suggests its use in this disorder. It may be given in a dose of  $\frac{1}{16}$  grain hypodermically, repeating this in half an hour, and remembering its reputed depressing influence upon the heart. I believe that good might result from the use of the modern synthetical hypnotics, such as sulphonal and trional, given in doses of 20 grains in a tablespoonful of hot water every half-hour until sixty grains have been taken. I have sometimes thought that in some cases it might be well to try the effect of what is known as mixed narcosis, recommended in 1877 for surgical operations by Nussbaum. This consists in giving a hypodermic injection of a full dose

of morphine—for an adult,  $\frac{1}{2}$  grain—and within fifteen minutes administering chloroform by inhalation. This might secure the quieting influence of morphine during the period in which the frenzy and violent physical exertion of the patient were controlled by chloroform. My observations lead me to believe that one reason why morphine has never done any good in a case of hydrophobia is, that the extreme mental and bodily excitement of the patient prevented it from exercising its usual physiological action until it was accumulated in such a quantity in the system that it produced death.

To summarize, I think the only medication of hydrophobia which offers any chance of being successful consists in the use of *cannabis indica*, hyoscine hydrobromate, one of the synthetical hypnotics, or mixed narcosis. I think that the synthetical hypnotics deserve trial, especially as they are free from the objection to which the vegetable hypnotics are open—namely, that they themselves may produce delirium or even mania.

My experience leads me to believe that, with a little ingenuity, drugs may usually be administered by the mouth to patients with hydrophobia. In case, however, this is impossible, the remedies just described, except chloroform, can be administered hypodermically, with such antiseptic precautions as are now used whenever the skin is punctured.

Having thus spoken of the medicinal treatment of hydrophobia, something may be said in regard to what is probably of greater importance—namely, the general management of such patients. This involves certain things which, I think, are of the utmost importance; and, first, that the physician should understand that, notwithstanding the conflicting views in regard to the nature of the disorder, there is absolutely nothing in its symptoms—if it be deserving of a special name—which is not amenable to the methods of treatment adopted by neurologists in the treatment of persons suffering with grave nervous disorders, and especially of those cases in which there is delirium, hallucinations, or mania. The second is, that there is nothing in the patient which is dangerous to his attendants or friends, except as any maniacal patient may do bodily harm. The literature of hydrophobia—with which I think I may say I have a rather thorough acquaintance—does not furnish a single trustworthy instance of the communication of hydrophobia from a hydrophobic patient to a human being. I once had occasion to act upon my convictions in this respect. In treating a well-built boy,

sixteen years old, who had been held down in bed by a number of men, and was in a furious state of excitement, I secured moral control of him, to the terror of those who looked on, by announcing my intention of listening to his heart, and then putting my ear on his naked chest, while I looked into his face for the space of a minute or two—it seemed rather a long time to me. If a physician wishes to do any good in a case of this kind he must have no fear, or at least show no fear to those in the sick-room. In like manner it should be known that physical restraint is hardly ever necessary. Of course, as in other forms of mania, the time may come when force must be used; but I know from experience that it is not required in many cases where it is used. Likewise no attempt must be made to make a diagnosis of hydrophobia by testing the patient's ability to eat and drink. These things are absolutely unnecessary to the diagnosis and extremely hurtful to the patient. It ought to be regarded as a mark of incapacity for a physician to make such tests after the patient has once shown or expressed repugnance to liquids or inability to swallow. As to the necessity of administering liquids for the sake of the fluids they contain, this can be met in two ways: in the first place by enemata of water, in the second place by immersion in a bath. The latter has been used—that is, the hot bath—as a remedy. But it must be borne in mind that hydrophobia does not kill by famishing or starvation, and it would be better to give a patient a chance to get well at the cost of being exceedingly thirsty and hungry rather than to torment him with drink or food, given by the mouth or rectum. I wish to lay especial stress upon this point, for it is saddening to one who is interested in this subject to see what is published, and copied from book to book on the practice of medicine, in regard to this matter. Long ago it has been shown that one of the best modes of treatment of tetanus in man and animals consisted in confining patients in a partly-darkened and quiet apartment, in absolute solitude; while no one can study this subject without seeing that the medication hitherto recommended is absolutely good for nothing, and the suggestions to maintain the strength while the disease is in progress are in diametrical conflict with every principle of nutrition.

Writers on this subject ought to know more about the function of nutrition, as physiologists understand it, than to recommend the introduction of articles of food into the stomach or rectum under such circumstances as are present in a case of so-called hydrophobia. I wish it

were possible to make in regard to this the impression which I think is correct. It ought to be the rule in a case of hydrophobia to reduce physical restraint and medical treatment to the very lowest point, and to make no attempts at feeding. In some cases I am satisfied that the best thing to do would be to dress the patient in his clothes, put him in a carriage, drive him out into the country, and set him to work in a field or walk him about in the woods, or otherwise to get his attention off of himself. I believe by this treatment many of the cases that could be properly called hydrophobia would get well. It is on record that an English physician once, finding himself developing symptoms of hydrophobia after a dog-bite, determined that he would not die in his bed, but, if necessary, in his boots. So he got up, took his gun, called his dogs, and started out on a hunt, returning at the end of the day thoroughly fatigued and thoroughly cured. This principle underlies the teaching of that wise man of his time, Celsus, and would probably prove more successful than the methods now recommended in text-books on medicine; it certainly could not prove less successful.

To sum up: in the treatment of hydrophobia, the important things are, first, to make an accurate diagnosis; second, to be honest but fearless with the patient; third, to avoid forcing the patient in any way, for food or medicine, and especially for drinking; fourth, to avoid violent medication; fifth, to follow a consistent, common-sense, and harmless line of treatment, not changing from one thing to another of unproved value.

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#### TUBERCULAR PERITONITIS.

CROFFORD (*American Journal of Obstetrics*, April, 1894), after reporting a number of cases, states that tubercular peritonitis is an operable disease. The immediate danger from the operation is not materially influenced by the character of the inflammation.

An early operation is of greatest value.

The chronic or slowly progressing variety offers the best indications for surgical interference.

When the primary deposit is in the tubes, which Winckel declares to be in fifty per cent. of the cases, an early salpingotomy will cure the disease.

Operations later in the disease will frequently prolong life and possibly cure.

# The Therapeutic Gazette

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## Leading Articles.

### THE TREATMENT OF THE INTESTINAL HEMORRHAGE OF TYPHOID.

THERE are few accidents occurring to the patient during typhoid fever which create so much alarm in all the persons concerned as hemorrhage from the bowel. While it is true that in some cases this accident is followed by a great amelioration in the symptoms, the very fact that at the time it is impossible to estimate the freedom of the flow of blood renders the anxiety intense, and the physician feels called upon to use every measure which is rational for the arrest of the hemorrhage. Probably the most efficient treatment which he can attempt is the application of a small ice-bag over the region of the ileum, with the hope that the external cold may have some effect upon the intestinal circulation, and to administer by the mouth Monsel's salt—that is, the subsulphate

of iron—in pill form, in the dose of 2 or 3 grains. These pills should be of sufficient age to make them difficult of solution, in order that they may escape through the stomach without being dissolved and decomposed by the juices of that viscus. To administer Monsel's solution under such circumstances is practically futile, because of the occurrence of its decomposition, as is also the administration of gallic or tannic acid, unless they are given in tough capsules or in coated pills, in such a way as to enter the bowel intact. The patient should also be placed flat upon his back and with the head as low or lower than his heels, and, should the hemorrhage be profuse, the foot of the bed should be very distinctly elevated, and bandages applied to the limbs to keep the blood circulating in the vital parts.

A very nice question in the treatment of such cases is that which covers the administration of stimulants. If stimulants are given, there is danger of displacing the clot with which nature may be closing the ruptured blood-vessel in the intestine. Yet, on the other hand, as the circulation fails and the patient becomes pulseless, the physician feels that active stimulation is absolutely necessary. We believe that the stimulant should not be employed until after bandaging of the extremities and elevation of the foot of the bed have been resorted to, and then it should be given most cautiously if needed. It is, moreover, important to maintain the bodily heat, and hot applications should be placed about the patient.

Our attention has been particularly called to this point by reason of an article upon this subject in one of the French journals, in which ergotine and similar remedies are advised. We believe that this treatment cannot be criticised adversely, and yet that it can actually exercise but little good. While it is true that ergot has a greater influence upon diseased blood-vessels, in all probability, than upon normal ones, the condition under these circumstances is not that of oozing from dilated capillaries, but from a distinct rupture of the coat of a blood-vessel, and we do not see how ergot can exert a sufficiently positive influence over the wall of the injured blood-vessel to actually stop the leak.

The employment of transfusion, either of human blood by the direct method or the transfusion of normal saline solution in the strength of 7 to 1000, offers very distinct advantages. Indeed, we are inclined to advise the employment of the normal saline solution injection intravenously, rather than the administration of stimulants which will be poorly ab-

sorbed, whether given by the mouth or hypodermically, owing to the feebleness of the circulation. Even if stimulants do not disturb the clot, they can do but little good, since the heart is not so much at fault as is the lack of blood. Whether the profession will ever have statistics which encourage them to open the abdomen and seek the point of hemorrhage is a question. While this is a much-to-be-desired advance in medicine and surgery, the mortality of the operation so far is so great, probably because of the exhausted condition of the patient, that surgeons are not encouraged to repeat the experiment.

#### THE ADMINISTRATION OF IODINE BY THE RECTUM.

THE *Journal de Médecine de Paris* for April 29, 1894, after pointing out that many patients are unable to take iodine compounds by the mouth, recommends their rectal injection, and there is little doubt that frequently this means of placing iodine in the body is of advantage. In our own experience we have found that in many cases in which iodine immediately produced gastric disorder, large doses of iodoform dissolved in oil or in suppository could be given by the rectum, and that constitutional disturbances were rapidly manifest, the patient often tasting the iodine in the saliva very soon after the treatment was instituted. The dose of iodoform which can be most frequently administered under these circumstances varies from 2 to 10 grains, according to the needs of the case and the ability of the bowel to absorb, coupled with the readiness with which the system responds to the drug. The injection which was recommended in the article which we have quoted is somewhat different from these, and may be given as follows:

- R Iodide of potassium, gr. xlv;
- Bromide of potassium, gr. xxx;
- Extract of belladonna, gr. v;
- Water, ℥xii.

To be divided into twenty parts, each one of which shall be added to two to four ounces of hot water at the time of the injection. Much larger amounts of iodide of potassium may be employed and smaller amounts of the bromide. The conditions in which the French authors recommend this injection are in hypertrophy of the prostate and in syphilitic ulceration of the rectum. The conditions in which we have found these injections serviceable have been in cases of syphilis, in ulceration of the bowel,

and in chronic catarrhal processes where the peculiar effects of iodine upon mucous membrane were eminently desirable. The object in doubling the bromide is to allay the irritability of the bowel, which may be produced by the use of an irritant substance, as the iodide of potassium, and it is for this reason that we so greatly prefer the iodoform.

#### TRIKRESOL: A NEW GERMICIDE.

AT the Fourth Meeting of the Association of Military Surgeons of the United States, held in Washington, May 1 to 3, 1894, attention was called to the valuable qualities of trikresol in general surgical work ("The Germicidal Value of Trikresol," by Walter Reed, surgeon U.S.A.).

After briefly reviewing the various mercantile preparations of the coal-tar derivatives, such as aseptol, creolin, lysol, solveol, solutol, saprol, etc., Dr. Reed called attention to Henle's painstaking investigation of creolin (A. Henle, "Ueber Creolin und seine wirksamen Bestandtheile," *Archiv für Hygiene*, Band ix., 1889). Henle's observation that cresol, as well as phenol, dissolves very well in soap solution, was important; and especially valuable was his conclusion that the germicidal value of creolin was due to some body contained in the tar oil of which it is made, and which body stands very near to cresol. This appeared to be a legitimate deduction, for inasmuch as creolin contained so little phenol and yet exhibited a high disinfectant power (*Staphylococcus aureus* being killed in a half-minute by a five-per-cent. aqueous solution), it was natural that Henle's attention should be directed to the insoluble hydrocarbons, the homologues of phenol, contained in tar oil.

Reed thinks that much credit should be given to Laplace, of New Orleans, for the work which he did bearing directly on this subject. While working under Koch, in 1888, Laplace mixed equal volumes of crude carbolic and concentrated sulphuric acids, and found that he had thereby obtained a dark, syrupy liquid, which was easily soluble in water and which possessed remarkable germicidal power. A two-per-cent. watery solution of the mixture destroyed anthrax spores in seventy-two hours, whereas a two-per-cent. solution of either carbolic acid or creolin was absolutely without influence. Here, then, was taken the first step in the evolution of the germicide which is at present attracting so much attention in Germany. Carl Fränkel's exhaustive review of Laplace's work

(*Zeitschrift für Hygiene*, Leipzig, 1889, Band vi.) proved conclusively that the body evolved and brought into solubility by mixing crude carbolic and sulphuric acids was none other than *kresol*, and not only confirmed Laplace's observations, but extended them considerably.

Arising from the important work of Laplace and Fränkel, a number of investigations have been carried on, during recent years, in Germany, by chemists, bacteriologists, and surgeons, growing out of the study of these higher homologues of carbolic acid,—viz., the *kresols*. These differ from phenol by having one atom of hydrogen replaced by the methyl-group  $\text{CH}_3$ . Thus, if we represent carbolic acid by the formula  $\text{C}_6\text{H}_5\text{OH}$ , that for *kresol* would be  $\text{C}_6\text{H}_4\text{CH}_3\text{OH}$ . There are three of these bodies, known as ortho-, para-, and meta-*kresol*. The first two are crystalline bodies, the third appearing as a colorless, thickish fluid, whose boiling-point is about  $201^\circ \text{C}$ .

Much difficulty has been experienced heretofore in trying to obtain these isomeric *kresols* in a pure state; but recently quite a step forward has been made in chemical methods, and they are now manufactured in a pure state from coal-tar, the three being presented together, and happily named *trikresol*.

The latter is a white liquid, of a creosote-like odor, specific gravity 1042 to 1049, and soluble in water to the extent of 2.55 per cent. Its solutions are clear, and, unlike solutions of carbolic acid, do not impart any sensation of numbness to the fingers and hands of the operator. It is also said to be less irritating to wounds than either carbolic or bichloride solutions.

As regards its great value as a germicide, Grüber (*Archiv für Hygiene*, 1893, Band xvii. S. 618) and Reed bear strong testimony; one-per-cent. solution of *trikresol* kills the pyogenic cocci in watery solutions invariably in half a minute. The same strength solutions in rich albuminous fluids require one and a half minutes to destroy *Staphylococcus aureus*. Its action is thus seen to be unusually prompt, even in the presence of albumin, which is an important point in its favor as compared with the older germicides.

Finally, its poisonous qualities are rated as slightly less than carbolic acid; but since one-per-cent. solutions of this agent accomplish the work of five-per-cent. solutions of carbolic acid, the danger from poisoning is greatly diminished. We invite the attention of the profession to this new germicide, which, to us, appears to promise a wide field of usefulness in surgical and gynecological work.

#### LEGISLATION FOR THE PREVENTION OF BLINDNESS FROM OPHTHALMIA NEONATORUM.

IT is a well-established fact that purulent conjunctivitis is responsible for most of the cases of blindness in young children, Magnus, of Breslau, having computed from carefully-compiled statistics that fully seventy per cent. of those who become blind during the first year of life owe their affliction to this disease, while Rivière, of Bordeaux, has shown that purulent ophthalmia alone has placed in the care of Europe nearly one hundred thousand victims.

It is further established by the census returns of 1880, as compared with those of 1870, that blindness has increased in the entire country more than four times as rapidly as the population, while in some States the proportionate increase is still greater. (Consult Howe, *American Ophthalmological Society Reports*, July, 1890.)

Boerne Bettman (*Journal of the American Medical Association*, May 19, 1894), bringing this matter before the Chicago Medical Society, contributes the following information:

"If we consult the United States census from the year 1850 to date, we learn that the number of blind enumerated during the previous decades is as follows: 1850, 9794; 1860, 12,658; 1870, 20,320; 1880, 48,928; 1890, 50,411.

"If compared with the population, which increased from 23,191,876 in 1850 to 62,622,250 in 1890, we obtain the following ratios:

"Number of blind to 1,000,000 of population: 1850, 422; 1860, 403; 1870, 527; 1880, 976; 1890, 805.

"As we are especially concerned about the State of Illinois, it will be interesting to ascertain the number of blind allotted to us in the records quoted. The following table comprises both the total number of blind for each period and their ratio to 1,000,000 of the population:

"Number of blind in the State of Illinois: 1850, 264; 1860, 476; 1870, 1042; 1880, 2615; 1890, 2834.

"Number of blind to 1,000,000 inhabitants: 1850, 310; 1860, 278; 1870, 410; 1880, 850; 1890, 741.

"It will be observed that the proportion of these sadly afflicted has greatly increased, notably so in 1880, and again decreased in 1890. These apparent inaccuracies are due to the methods of enumeration adopted, and are fully explained in the following words of Dr. Wines, quoted from the Report of the Board of Public Charities of Illinois, 1892: 'With re-

gard to the so-called "defective" classes, it should be known that Dr. Wines, in 1880, supplemented the enumerators' returns by correspondence with physicians, who added many names to the lists. This correspondence was not renewed in 1890, which accounts, at least in a large degree, for the seeming slight falling off in the ratio in 1890."

It is also established that proper prophylaxis, notably Credé's method, in hospital practice and in all cases where known infection exists, and milder prophylaxis in private practice generally, is capable of reducing the number of cases of this disease to a minimum.

Finally, it is established, on the one hand, that failure promptly to recognize and properly to treat this inflammation results in disastrous consequences; while, on the other hand, if suitable measures are quickly and thoroughly instituted, before corneal complications arise, the majority of cases will be brought to a successful termination. The exceptions to this rule are those cases which from the beginning assume a diphtheritic type, or, as, for example, Dr. Randall has shown, those which, probably from some inherent malignancy not yet well understood, go on to destruction in spite of the best care and the most scientific treatment.

From what has been written, it is evident that measures to prevent ophthalmia neonatorum rank in importance with those which are employed against contagious diseases, and that success depends mainly upon promptness in therapeutic action. Therefore, as Dr. Howe has well shown that a mere attempt to educate the laity and nurses on these points is insufficient and even useless, it becomes necessary to invoke stringent legislative regulations against this appalling cause of blindness. Ever since 1887, Dr. Howe has devoted much attention and energy to this matter, beginning his labor by taking the subject before the American Ophthalmological Society, and finally last year before the American Medical Association, and it is in great measure due to his conscientious work that much good in this line has been accomplished.

At the present time New York, Maine, Rhode Island, Maryland, Minnesota, and other States have passed laws which have for their object the preventive treatment of this disease, the main sections in all the acts thus far adopted being the direction that the nurse or attendant shall at once report to the health officer, or a legally-qualified practitioner, if one or both eyes of the infant are reddened or inflamed within two weeks after birth, and that failure to comply with this provision shall be punish-

able by fine or imprisonment, or both. In this way, as Dr. Howe has said, the responsibility is placed where it belongs.

At the recent meeting of the Pennsylvania State Medical Society the text of an act similar to those already passed in other States was introduced by Dr. Gould, and it is earnestly hoped that physicians throughout this entire State will use every means to secure the passage of this act, so that this State may not be backward in adopting measures to check the spread of blindness.

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## Reports on Therapeutic Progress.

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### *TREATMENT OF ERYSIPELAS WITH HYPODERMIC INJECTIONS OF CARBOLIC ACID.*

In the *Medical and Surgical Reporter* for March 24, 1894, GASTON reaches the following conclusions in a paper on the treatment of erysipelas with hypodermic injections of carbolic acid. In only one patient did this treatment fail. In this instance he was called in consultation at an advanced stage of erysipelas involving the entire scalp, accompanied with coma. As an offset to this, he has frequently employed the carbolic acid hypodermically when the scalp was partially involved in erysipelas, with complete relief.

He alludes to a case at term with erysipelas, in which there was face presentation requiring podalic version, and followed by erysipelas of the genitalia and the hypogastric region. The injections hypodermically of carbolic acid in various portions of the area affected were crowned with complete success.

The formula employed by the original reporter was a solution of carbolic acid in dilute alcohol. But this was modified by Gaston afterwards, and he has used for the past ten years the following:

R Carbolic acid, fgi;  
Glycerin, fgiij;  
Distilled water, fgiiv. M.

Inject hypodermically 1 syringeful in each portion of the size of a hand, daily.

It will be observed that this is a twelve-and-a-half-per-cent. solution, and only in a few cases has any local irritation resulted from the injection.

When the thickened and hardened condition of the skin has rendered it difficult to introduce the needle, he selects points on the border of the dermatitis to make the injection,

so as to reach the areolar tissue beneath the skin. There is little pain connected with it. Of course this treatment does not preclude resort to any internal treatment which may be indicated, and when the extent of surface involved is large or the febrile condition is great he has used internal remedies.

The best effects have been secured by giving at the outset calomel, followed by Epsom salts in senna-tea, to procure free evacuations from the bowels. After purgation he gives 25 drops of the muriated tincture of iron every three hours until an ounce is taken. In some cases chlorate of potassium in 10-grain doses has been combined with the iron, especially when there is a tendency to the phlegmonous form of erysipelas.

When the case is seen in its early stages, hypodermic use of the formula given above rarely fails to bring success. The writer details an interesting case of a man suffering from periodic recurrence of this disease in his feet and legs every spring. He had a well-developed case of erysipelas on both legs, extending up to the knees. The carbolic acid was used hypodermically in two places on each leg and repeated on two successive days, without any other treatment. All traces of the disease disappeared, and during five years subsequently there has been no return of the disease. This case indicates a specific action of carbolic acid in the cure of erysipelas.

The influence upon the system of such an injection is general and not confined to the immediate location of the puncture, so that it may be considered as a constitutional impression of the remedy. Some caution is requisite against an undue quantity of this solution of carbolic acid being used on one occasion, lest a toxic influence be manifested. He has repeatedly introduced a syringeful of the solution in four different places without producing any untoward effect, and hence it may be allowed that this quantity distributed over an area of four hand's breadth is entirely safe. It is also found proper to repeat the injections daily for three days, but it is not necessary to continue the treatment for a longer time.

#### *EFFECT OF MERCURIAL TREATMENT ON THE URINE.*

WELANDER (*Arch. f. Derm. u. Syph.*, xxvi., Part 3) says that great numbers of observations have shown that mercury is in large part eliminated by the kidneys. Does it irritate the kidneys? Welander made a number of observations on patients treated with different preparations

of mercury. He found that there are seldom casts or albumin in the urine of patients in the early period of syphilis; but in a later period, at the same time as gummata, patients may suffer from a peculiar form of acute nephritis, with blood-casts, fatty casts, etc., in the urine. This form of nephritis disappears, together with the other syphilitic manifestations, under specific treatment. Severe treatment with mercury often gives rise to casts and sometimes albumin in the urine, but neither the absence of these from the urine nor the absence of stomatitis shows that only little mercury is being absorbed; this can be determined only by examining the urine or fæces for mercury. The affection of the kidney dependent on mercurial treatment passes off fairly quickly and, as a rule, leaves no tendency to nephritis behind it, but in cases of acute mercurial poisoning actual lesions can sometimes be made out in the kidneys. Nowadays, by the centrifugal apparatus, casts can easily be found in the fresh urine, and Welander, from a series of observations, thinks that the finding of one or two hyaline or finely granular casts in the urine is no proof of any actual morbid structural change in the kidneys. When, however, the number of these casts is observed to increase, and especially when epithelial and blood-casts are also observed, it is certain that a more or less abnormal condition exists in the kidneys. These were Welander's former conclusions, and they are confirmed and extended by the following results of his recent observations. In a large number of cases he found that under mercurial treatment the number of casts was not increased in 23.2 per cent., but distinctly increased in 28.9 per cent., and considerably increased in 47.9 per cent. of the cases. In a few cases he was able to ascertain that the number of casts diminished or disappeared after cessation of the treatment, at least, after an interval, as might be expected, for the elimination of mercury by the kidneys lasts some time after cessation of the treatment. Mercury is more likely to give rise to urinary casts in old patients than in young ones, and Welander's observations seem to show that, apart from age, patients with tertiary syphilis are more likely than those with primary syphilis to get casts in the urine under mercurial treatment. It seems that the form in which the mercury is administered makes no difference in this respect, except in so far as concerns the quantity that is absorbed into the system and eliminated by the kidneys. The casts in the urine do not seem to be increased by the taking of iodide of potassium simultaneously with the mercury. When mercurial treat-

ment in a strong young man with primary syphilis gives rise to casts in the urine, this must be ascribed to idiosyncrasy, which, indeed, plays a great part in the whole matter. A certain degree of albuminuria is sometimes, as well as the presence of casts, evidently caused by mercurial treatment, and albuminuria, when due to mercury, is always associated with an unusual proportion of casts. Welander has observed that mercurial treatment may also induce the presence of casts and albumin in the urine in non-syphilitic persons.

The practical outcome of his observations is that mercury should be administered with great caution when there is disease of the kidneys, or when in the course of mercurial treatment albumin appears in the urine together with casts, more especially if some of the latter are epithelial. Moreover, when a patient is undergoing thorough treatment with mercury, a watch should be kept on his urine, as on the state of his gums, alimentary canal, and skin.—*British Medical Journal*, April 28, 1894.

#### THE USE OF A COMBINATION OF CARBOLIC ACID AND CHLOROFORM IN ENTERIC FEVER.

QUILL writes a paper on this subject for the *British Medical Journal* of April 28, 1894.

The combination of carbolic acid and chloroform was adopted for the following reasons: In 1892, Dr. McIntyre, of Glasgow, conducted some experiments in regard to the action of carbolic acid on the enteric bacillus (Gaffky's), and found that, in addition to an antiseptic action on the intestinal contents, the acid controlled the development of the enteric bacillus. Previously to this, in 1890, Werner, of St. Petersburg, made similar experiments with chloroform, and found that a one- to two-per-cent. solution of chloroform killed the enteric bacillus.

Reflecting on these experiments, it occurred to me that a combination of these drugs, both of which had a distinctive effect on the specific micro-organism of enteric fever, and one of which had as well a wholesome intestinal antiseptic action, ought, if given with judicious freedom, to be effectual in rendering immune the enteric bacillus and its septic products. So far these expectations have been realized.

He has treated with the carbolic acid and chloroform combination during the past year all the cases of enteric fever that have come under his care, and in each case perfect recovery has followed, without the advent of any symptom calculated to cause anxiety.

It is a gratifying experience to be able to make this record regarding a fever which in India has a mortality very considerably higher than that usually experienced in temperate climates.

The following are the effects he has observed as resulting from the use of the carbolic acid and chloroform combination:

1. A reduction in the average duration of the fever.
2. A continuous depression of the febrile temperature.
3. Early cleansing of the tongue, dryness of which was rarely observed, and was then evanescent.
4. An almost complete deodorization of the stools.
5. Abdominal distention kept in entire abeyance.
6. Tendency to diarrhoea checked.
7. Intellectual clearness of patient preserved, with no tendency to stupor or delirium.
8. Secondary complication of any kind never occurred.
9. Relapses rare; when they occurred they were of short duration.
10. Food invariably well assimilated.
11. Convalescence rapid.

#### THE IODIDE OF RUBIDIUM.

In syphilis, LEISTIKOFF proposes to replace the iodide of potassium with the iodide of rubidium. The advantages of the iodide of rubidium are the lack of disagreeable taste and the fact that the development of iodism is not so frequently produced. The dose is the same as that of the iodide of potassium.—*Journal de Médecine de Paris*, April 22, 1894.

#### EXCISION OF TONGUE AND OF SUB-MAXILLARY GLANDS. LIGATURE OF BOTH LINGUAL ARTERIES.

A note in the *Medical Press and Circular* for April 18, 1894, states that MR. G. SILCOCK operated on a man, aged about thirty-five, who had been in the hospital six months ago with a small patch on the tongue; this had been freely excised, a wide sweep being taken all round; at the time it was by no means certain what the growth was. However, at the present time the patient had come back with a recurrence, and it was decided to remove the whole tongue. As the growth was very far back, quite at the root, it was thought better to ligature both linguals. This was done in the usual way in a comparatively short time. Next a thread was



passed through the centre of the tongue and the organ drawn well forward and rapidly snipped away with the scissors, the operator beginning at the frænum and taking away the whole tongue and the anterior pillars of the fauces. The bleeding was necessarily very slight, but a deep vessel, which was thought to be the left ascending pharyngeal or one of its branches, gave a little trouble. However, a pair of forcipressure forceps eventually secured the bleeding vessel, and these were left on at the end of the operation for safety. Controlling the hemorrhage was much facilitated by the floor of the mouth being pushed up on the left side through the wound made by tying the lingual artery on that side. The next proceeding was the removal of the submaxillary glands; the one on the left side was hardened, and as a measure of prudence the one on the right side was also taken away. The removal of these glands gave rise to a lot of troublesome hemorrhage and materially prolonged the operation, as the arresting of the bleeding took some time and care. The wounds made for the ligature of the linguals served also for the excision of the glands. The opening on the left side extended through into the mouth during the operation, owing to the extensive removal of the base of the tongue on that side. Both wounds were lightly sewed up.

#### GUAIACOL.

DR. DESPLATS, professor at the medical faculty of Lille, was the first to note the antithermic effects of guaiacol when painted on the skin, but it appears that, as a sedative, it also constitutes a valuable resource in the treatment of certain painful affections. Thus, guaiacol not only suppresses rapidly the neuralgic pains so frequently met with in tuberculous patients, but also sciatica and rheumatism, where salicylate of sodium and antipyrin have failed. However, the application of guaiacol in its pure state is painful in itself and irritates considerably a delicate skin. For this reason M. Moissy mixes it with equal parts of glycerin, by which no inconvenience is felt. The dose to be employed is  $\frac{1}{2}$  drachm, but the painting can be renewed as the sedative effect has passed away,—that is to say, in about five hours. At the meeting of the Société Médicale des Hôpitaux, M. Balzer said that he had tried guaiacol in the treatment of orchitis with good results, in ointment (guaiacol vaseline). A burning sensation is felt for about ten minutes, after which the patient experiences a certain *bien-être* which

permits rest and sleep. Guaiacol has no resolutive effect on the swelling.—*Medical Press and Circular*, April 18, 1894.

#### THE TREATMENT OF NEPHRITIS.

In a lecture reported in the *Medical News* of April 21, 1894, DA COSTA speaks on this subject. He thinks that the salts of strontium are valuable as diuretics in renal affections, and they are particularly valuable in the acute forms, but do less good in the chronic forms. They do not, according to the writer's experience, act so much upon the structure or tissues of the kidneys as upon its secreting function; they are admirable diuretics. The claim that has been made by some French clinicians that strontium salts markedly reduce the amount of albumin in the urine has not been fully confirmed in the author's experience, except that the relative proportion of albumin is greatly reduced by the great increase in the quantity of the urine secreted. There is, however, some slight diminution in the amount of albumin, as well as increase in the quantity of the urine, especially in the acute forms. Whether in the parenchymatous and interstitial renal diseases these salts act beneficially upon the diseased or degenerated structures, or simply act as diuretics, has not been finally settled; but they certainly accomplish more good in the acute than in the chronic forms of nephritis.

To return to our patient. In treating this case we need pay less attention to restricting the diet than in the other cases. This man may have meat and vegetables and a nourishing diet, avoiding indigestible and highly-seasoned articles of food. For his treatment now he shall take bichloride of mercury,  $\frac{1}{16}$  grain, in a wineglassful of water three times a day, as a tonic to improve his tissues. This will be the treatment in this case, except that we will see, with the aid of the lactate of strontium, that the urinary secretion is kept free.

#### DYSPEPSIA IN WOMEN.

In an abstract of the Ingleby lecture on the common forms of dyspepsia in women, SAUNDBY thus speaks of medicinal treatment:

On account of the prevalence of anæmia in these cases iron takes a very prominent place in their treatment. Where this symptom is marked, we may give pil. ferri (Blaud's pill), sulphate of iron in mixture, so often usefully combined with sulphate of magnesium, or the tincture of the perchloride of iron.

Strychnine is extremely useful in combating the motor weakness of the stomach and intestine, and may be suitably combined with iron, or, in those cases where iron is not indicated, with a mineral acid, of which hydrochloric acid seems the most appropriate. A mixture in which these two drugs form the essential elements is very beneficial to the ordinary type of atonic gastralgia, and is thus formulated in the General Hospital Pharmacopœia :

R Ac. hydrochlorici dil., ℥x;  
Ac. hydrocyanici dil., ℥v;  
Liq. strychniæ, ℥iiss;  
Sodii chloridi, gr. xx;  
Glycerini, ℥xxx;  
Aq., ad ℥i.  
Ft. ht.

Sig.—To be taken thrice daily, an hour after meals.

Magnesium and sodium sulphate deserve early mention among the drugs which stand first in usefulness and in the frequency with which they are required. Constipation is the absolute rule in these cases, and of all aperients the salines are the best. When the patient is in bed the dose may be divided and given three times a day, but when she can get about it is better to give it the first thing in the morning on rising from bed. There is little to choose between the magnesium and sodium salt, except in their taste, of which, probably to most people, the former is more disagreeable. Either may be given in the shape of mineral water, of which Franz-Josef, Æsculap, Friedrichshall, and Hunyadi are among the best-known magnesium waters, and Carlsbad, Kissingen, and Rubinat the sodium waters. The last is one of the least disagreeable and most efficient, and can be strongly commended. Aperient waters may be taken hot or cold, and probably act better, as a rule, when hot. If really hot, they are less disagreeable, but if only warm, their nauseous taste is increased and may cause vomiting. Where there is gastritis, these salts or waters should always be taken in half a pint of water as hot as it can be sipped.

Abernethy said he would define biliousness as a condition curable by blue pill, and there should be no doubt of the value of this remedy in all cases of subacute gastritis. The drug may be given in the form of calomel or blue pill. The writer prefers the latter, and generally gives two 5-grain pills, one to be taken at bedtime on successive or alternate nights, according to the extent of its action. It unquestionably has the power of allaying gastritis, and in small continued doses is useful in the chronic form as well. How it acts—whether as an an-

tiseptic, or by unloading the vessels, or by both means combined—we cannot be sure, but its power in both these directions is indisputable, and no one will question the good results which follow its administration. That mercury was abused in the treatment of the early part of this century there can be no doubt. Sir Robert Christison used to illustrate this abuse by relating that when he was a young man attending St. Bartholomew's Hospital a discussion upon this subject arose among a company, of which the house surgeon formed one. In order to maintain his opinion, Christison offered to bet him that there were not ten patients in the hospital who were not at the time under mercurial treatment in some shape or form, but the house surgeon would not accept the challenge, so little certain did he feel of winning it. Nevertheless, the reaction that set in led to the undeserved disrepute and consequent neglect of one of the most generally useful drugs in the Pharmacopœia.

In the treatment of gastritis, whenever there is evidence of much irritation by pain, furred tongue, icterus, or mucous vomiting, etc., bismuth is indicated. It may be given in various combinations and forms,—for example, in subacute gastritis, with blue pill and a saline aperient, the following powder, to be taken three times a day before food :

R Bismuth. salicyl., gr. x;  
Sodii bicarb., gr. x;  
Pulv. rhei., gr. iii;  
Pulv. cinnamomi co., gr. v.  
Ft. pulv. xii.

It should be taken in milk, and is an excellent remedy for ordinary use. Where the bowels are irritable the rhubarb may be omitted. In chronic gastritis with mucous vomiting, the following may be given :

R Bismuthi carb., gr. xv;  
Sodii bicarb., gr. x;  
Muc. tragacanthi, ℥ss;  
Aq., ad ℥i. M.  
Ft. ht.

Sig.—To be taken thrice daily before meals.

In cases of atony, with slight gastritis :

R Liq. bismuthi et ammon. cit., ℥i;  
Sodii bicarb., gr. x;  
Tr. nucis vom., ℥x;  
Inf. gentianæ, ad ℥i. M.  
Ft. ht.

Sig.—To be taken thrice daily before meals.

We have seen that not very uncommonly there is distinct deficiency in the hydrochloric acid of the gastric juice ; it is difficult to give

as much as is needed to compensate for defective secretion, but 15 drops in a wineglassful of water may be taken through a tube every hour for four hours after each meal. Pepsin is much more rarely absent, as so little of the ferment is actually necessary; but when artificial digestion has determined the want of it, it may be very easily supplied by any of the good preparations now in the market. In connection with the use of these remedies, it may be said that they do not do so well as might be expected, nor does their absence produce the ill effects we should anticipate. In fact, so long as the food is not retained too long in the stomach, its chemical condition is of comparatively little importance, the deficient digestion in the stomach being made up by the activity of the pancreatic and intestinal juices. It is, therefore, to the various means for promoting motor activity that we should chiefly look in the treatment of these cases.

#### NEW APPLICATIONS OF CAFFEINE IN DISEASES OF THE HEART AND KIDNEYS.

In the *Journal de Médecine de Paris* for April 22, 1894, is an article by PAVINSKY on a series of experiments made by him concerning the value of various compounds of caffeine. The author used caffeine and the salts of sodium, the benzoate and the salicylate. He arrives at the following conclusions:

In valvular affections of the heart the caffeine fulfils the indication of compensating for insufficiency, in many cases being equally valuable with digitalis and strophanthus. Under its influence the œdema is absorbed and the excretion of urine increased. The rhythm of the heart is also improved. The author administers caffeine whenever the lesions resulting from the cardiac failure are sufficiently advanced to produce passive congestion of the liver, of the kidneys, or when it is associated with chronic interstitial nephritis. Under such circumstances the left ventricle is often hypertrophied, and so compensation is completed. Where the œdema of the extremities is marked and the urine is scanty, caffeine is particularly useful, acting when digitalis is without effect, as it regulates the circulation, increases renal secretion, and so causes disappearance of the œdema. In cases of chronic myocarditis, fatty degeneration of the heart, and sclerosis of the coronary arteries it may do some good, but particularly in myocarditis is it serviceable. Caffeine is also useful in very acute insufficiency, such as occurs during the course of acute infectious diseases;

particularly is it useful in shock or collapse with disappearance of the radial pulse and cyanosis of the extremities, as it stimulates the vaso-motor centre and so causes an equal distribution of the blood-supply. The preparation of caffeine which Pavinsky most frequently employs is the benzoate of sodium and caffeine, which he gives in the dose of 2 to 4 grains in a cachet, often giving as much as six to eight cachets in a day; or he gives the following combination:

R Caffeine benzoate of sodium, gr. iv;  
Powdered digitalis leaves, gr. i;  
Powdered camphor, gr. vi;  
White sugar, gr. iv.

Put up into one cachet, and 3 to 6 of these cachets to be given in a day.

The total doses of these caffeine preparations which he recommends are 20 grains of caffeine benzoate of sodium, or 25 grains of the caffeine salicylate of sodium, or 8 to 15 grains pure caffeine.

In cases where the first sound of the heart is feeble and collapse is present the following prescription may be given subcutaneously:

R Caffeine benzoate of sodium, ʒi;  
Distilled water, ʒvi.

10 to 20 minims of this solution hypodermically.

Or,

R Caffeine salicylate of sodium, gr. xlv;  
Distilled water, ʒvi.  
10 to 20 minims hypodermically.

Should the symptoms be very urgent, several syringefuls may be injected. Should the administration of caffeine by the mouth produce irritability of the stomach, he employs the following prescription by suppository:

R Caffeine benzoate of sodium, ʒi;  
Cocoa butter, q. s.

Make 2 suppositories; give 2 to 4 of these a day.

#### PRESCRIPTIONS.

In cases of anæmia:

R Ferri reducti,  
Pulv. camphoræ, of each, ʒiss;  
Ext. gentianæ, ʒi;  
Mucilaginis acaciæ, q. s. M.

To make ninety pills; 2 or 3 may be taken thrice daily.

A new treatment for pertussis:

R Hydrarg. perchlor., gr. i;  
Aq. destill., ad ʒiv. M.  
Label for external use.

A small tampon of cotton-wool is dipped in the solution, and then the base of the tongue, the epiglottis, and the mucous surfaces adjoining are freely swabbed therewith. In slight cases of pertussis this treatment may be practised once a day, but in grave cases twice in twenty-four hours.

A useful hepatic stimulant :

R Euonymin, gr. ii;  
Pil. colocynth. comp., gr. ii;  
Ext. hyoscyami, gr. ss. M.

To form one pill; 1 or 2 to be taken at bedtime.

For hæmoptysis :

R Pulv. ergotæ,  
Pulv. extracti krameriæ, of each, ʒi;  
Extracti belladonnæ, gr. v;  
Pulv. digitalis, gr. x. M.

To make forty pills; from 4 to 6 to be taken for a dose.

The patient must keep quiet, lying in bed, with heat to the extremities, and be given pieces of ice to suck.—*Medical Press and Circular*, May 2, 1894.

#### THE EMPLOYMENT OF CAFFEINE IN CHILDREN.

The *Bulletin Générale de Thérapeutique* for May 15, 1894, contains an abstract in which the value of caffeine in the treatment of children is emphasized, particularly in those diseases which are accompanied by a feeble circulation, such as typhoid fever, pneumonia, and diphtheria, or the congestion of the lungs which is so apt to occur with the infectious diseases. It is believed that the drug prevents the collapse and syncope which may occur after the use of a cold bath. If such an accident should be threatened, a hypodermic injection of the caffeine should be given. Perhaps the best way to administer the caffeine by the mouth is as follows :

R Caffeine, gr. xx;  
Benzoate of sodium, gr. xx;  
Vanillin, gr. i;  
Syrup of tolu, ʒii;  
Rum, ʒiii;  
Water, ʒiii.

2 teaspoonfuls once, twice, or thrice a day.

#### PRESCRIPTIONS.

For tic douloureux :

R Ammonii chloridi, gr. xx;  
Butyl chloral hydratis, gr. v;  
Glycerini, ℥x;  
Aquæ chloroformi, q. s. ad ʒss.  
Misce et fiat haustus.

To be taken every two hours till three doses have been taken.

An ointment for acute rheumatic arthritis :

R Acidi salicylici,  
Adipis lanæ hydrosi, of each, ʒi;  
Olei terebinthinæ, ʒi;  
Adipis benzoati, ad ʒi.  
Misce et fiat unguentum.

To be frequently well rubbed into the affected parts.

Subcutaneous injection for hemorrhoids :

R Acidi carbolic, ʒiss;  
Acidi salicylici, ʒss;  
Sodii biboratis, ʒi;  
Glycerini, ad ʒi.

Misce et fiat injectio hypodermica.

2 to 4 minims to be injected slowly into the base of the hemorrhoid.

A depilatory pigment :

R Iodi, gr. xii;  
Olei terebinthinæ, ℥xx;  
Olei ricini, ʒss;  
Spiritus rectificati, ʒliiss;  
Collodii, ad ʒi.  
Misce et fiat pigmentum.

To be applied daily for three days.

—*Practitioner*, May, 1894.

#### BENZINE-POISONING AND THE ABUSE OF BENZINE.

After referring briefly to the cases of benzine-poisoning reported by Kobert, Koppel, and Falk, DR. ERNST ROSENTHAL (*Centralblatt für Innere Medizin*, No. 13, 1894) reports a case which came under his care. A year-and-a-half-old child drank perhaps a teaspoonful of benzine from a bottle. Rosenthal saw the child about fifteen minutes later, when it was in a state of stupefaction. When the skin was irritated, it roused and struggled and cried, but as soon as it was let alone it subsided again into the former state. Rosenthal promptly withdrew the contents of the stomach, which consisted of particles of milk and flakes of bloody-colored mucus, and smelled strongly of benzine; then he washed out the stomach, finding more bloody mucus. At first the symptoms of poisoning seemed to become more intense; after about an hour they reached their height. At this time the pulse was at times not perceptible in the radial artery; respiration had become somewhat more frequent and was accompanied with a rasping sound. The child's breath smelled strongly of benzine. Mostly the child lay quiet in narcosis, occasionally rolling about and in danger of falling from the bed; sometimes it clutched its body and distorted its face with pain. The pulse rose gradually, the skin became warm, a profuse perspiration occurred, and apparently the child fell into normal sleep.

On the evening of the same day, six hours after the poisoning, the child was still slightly stupefied, was weak, could not stand up, but staggered; the respiration was still above normal; the urine passed that evening was free from albumin and sugar. Rosenthal ordered an enema, and it was followed by a passage which contained bloody flakes of mucous membrane. The next morning the child was perfectly well again.

Rosenthal had one patient who had the "benzine habit;" he had formerly been addicted to alcohol, and found the benumbing produced by smelling benzine a complete substitute for alcohol.

#### PRESCRIPTIONS.

An application for enlarged glands:

R Iodoformi,  
Bals. Peruviani, of each,  $\mathfrak{z}\text{i}$ ;  
Collodii,  $\mathfrak{z}\text{i}$ . M.

To be painted over the swellings every night.

For urticaria:

R Liq. calcis,  
Aq. lauro-cerasi,  
Glycerini, equal parts. M.

The skin is dabbed with some of the lotion, and then covered with a thin layer of cotton-wool.

For fetid diarrhoea in children:

R Calomel, gr. iss;  
Zinci sulpho-carbolatis,  $\mathfrak{z}\text{iiss}$ ;  
Bismuthi subnitratris,  $\mathfrak{z}\text{ii}$ ;  
Pepsinæ, gr. xxx. M.

Divide into twenty powders; 3 powders daily for a child of one year.

For laryngeal phthisis:

R Iodoformi,  $\mathfrak{z}\text{i}$ ;  
Pulv. acid. borici, gr. vii;  
Pulv. calcii phosph.,  $\mathfrak{z}\text{iiss}$ . M.

Morning and evening the throat should be insufflated with the powder, which must be extremely fine.

A mixture for asthma:

R Chloroformi,  $\mathfrak{z}\text{i}$ ;  
Ætheris,  $\mathfrak{z}\text{iiss}$ ;  
Syr. acaciæ,  $\mathfrak{z}\text{i}$ ;  
Tinct. cardamomi co.,  $\mathfrak{z}\text{i}$ . M.

A teaspoonful to be taken every half-hour until relief is obtained.

Pills for chronic bronchitis:

R Ammonii chloridi, gr. xv;  
Ammon. carb., gr. xv;  
Pulv. ipecac., gr. iii;  
Morph. hydrochloratis, gr. i;  
Mucilaginis acaciæ, q. s. M.

Divide into ten pills; 1 to be taken night and morning.

—*Medical Press and Circular*, May 9, 1894.

#### ON A NEW TREATMENT OF DIPHTHERIA AND PSEUDO-MEMBRANOUS LARYNGITIS.

PIEDALLU (*Les Nouveaux Remèdes*, March 24, 1894) claims to have been successful in the treatment of diphtheria and pseudo-membranous laryngitis without resorting to surgical interference. Since 1891 he affirms to have treated these cases without a single death. He employs the following combination, which is a modification of Gibert's syrup:

R Simple syrup, 1000 grammes ( $33\frac{1}{3}$  ounces);  
Iodide of potassium, 50 grammes ( $1\frac{1}{2}$  ounces);  
Biniodide of mercury, .50 gramme (8 grains).

The author administers this mixture in tea- or dessertspoonfuls every two hours, according to the age of the child. He has given as much as three hundred grammes (ten ounces) of the iodo-mercurial syrup in from six to eight days to children of from four to six years of age. In a few hours after the ingestion of the remedy, the symptoms of iodism, such as coryza, insalivation, etc., appear; the dose is then diminished, but a condition of saturation is maintained. An antiseptic gargle is likewise recommended. Twice or three times a day the false membranes are raised carefully with the handle of a spoon and touched with a tampon charged with Van Swieten's liquid. The good results are obtained in about forty-eight hours. In rebellious cases such results are not observed before the fourth or the fifth day of treatment, but the administration of the syrup is continued, in doses proportionate to the gravity of the disease. This form of medication is well borne by children. No colicky pains, vomiting, or stomatitis have been observed. If the patient exhibits gastric disturbances, ipecacuanha is administered. Special attention should be paid to the condition of the bowels. A milk diet is advised. The kidneys must be kept active, and as soon as the child is able to eat, light articles of food are allowed. The author energetically protests against the use of any alcoholic medication.

#### A PRESCRIPTION FOR INTERMITTENT FEVER.

R Salicylate of quinine, gr. xx;  
Syrup of orange,  $\mathfrak{z}\text{ii}$ ;  
Rum,  $\mathfrak{z}\text{ii}$ ;  
Simple syrup,  $\mathfrak{z}\text{iii}$ .

A dessertspoonful every hour for eight hours prior to the attack in quotidian fever, twelve hours prior in tertian fever, and fifteen hours before the attack in quartan fever.

—*Journal de Médecine de Paris*, May, 1894.

## TREATMENT OF EPILEPSY.

In the *Journal de Médecine de Paris* for May 13, 1894, there is an article upon this subject, in which the treatment is given as follows:

For the prevention of an attack, intellectual fatigue should be avoided, as should also rapid changes of temperature and exposure to great heat or cold. The use of alcohol and coffee in large amounts at meals is to be prohibited. During the attack care is to be taken that the patient does not injure himself, and should any tendency to repetition of the attack occur the following rectal injection should be given:

R Chloral,  
Bromide of potassium, of each, gr. xxx;  
Yolk of egg, 1;  
Water, ℥viii.

Should the epilepsy be traumatic in origin, surgical interference should be resorted to. Care should be taken not to confound traumatic epilepsy with that due to syphilis. If the latter is the cause of the disease, mercurial inunctions and intramuscular injections should be resorted to.

Between the attacks the patient should receive nerve sedatives. The following is a useful formula:

R Bromide of potassium, ℥vi;  
Phosphate of sodium, ℥vi;  
Syrup of bitter orange, ℥i;  
Wine, ℥x.  
Tablespoonful after each principal meal.

Should the epileptic attacks occur at the menstrual periods, it is well to administer the following powder in cachet:

R Antipyrin, gr. viii;  
Bicarbonate of sodium, gr. ii.

If the pulse is feeble and the circulation is poor, the following may be used in a cachet:

R Powdered digitalis, gr. i;  
Bicarbonate of sodium, gr. v.

In other instances it is well to administer, with the bromide, hyoscyamine as follows:

R Bromide of potassium, ℥i;  
Bromide of sodium,  
Bromide of ammonium, of each, ℥ss;  
Crystallized hyoscyamine, gr. ʒi;  
Water, Oii.

A tablespoonful to a wineglassful three times a day, or oftener if needed.

Should evidences of bromism occur, it will be found that the bromide of gold is well borne, and the following may be ordered:

R Bromide of gold, gr. iv;  
Water, Oii.

A tablespoonful twice or three times a day.

Sometimes it is well to administer the bromides in beer or milk to mask the taste. In some special cases of epilepsy, borax, in 5- or 10-grain doses, is useful.

## WASHING OUT THE LARGE INTESTINE WITH OIL.

According to JULIO ROBERT (*Revista de Medicina y Cirugía Prácticas*, No. 419; *Rev. Internation. de Bibliograph. Médicale*, March 25, 1894), Chercheffsky's method of washing out the large intestine with oil consists: 1. In introducing a Nélaton rubber sound through the anus and as far inward as the valve of Bauhin. 2. In injecting by means of this sound a Russian pound, or 407 grammes (13 ounces and 1 drachm) of olive oil at a temperature of 100.4° F. (38° C.). The patient is placed on the side and the sound introduced, the oil being poured in from a height of about twenty-four inches (sixty centimetres). The oil must in every case be injected in a slow manner. The method is of general application in cases of constipation. The fecal matters, expelled at about twelve hours after the operation, are abundant and of a fetid odor. The evacuation can be hastened by the administration on the following day of a glassful of some saline purgative water. The intestinal washing should be made preferably four hours after the evening meal. The author details four cases treated by the above method, and suggests a similar treatment in all cases where symptoms of auto-intoxication, due to intestinal fermentation, are present.

## HOW TO PRESCRIBE CERTAIN REMEDIES.

In an interesting article upon the art of prescribing medicines, DUJARDIN-BEAUMETZ (*Bull. Génér. de Thérapeutique*, March 30, 1894) calls attention to the advantages and disadvantages of certain remedial combinations intended for external use. Referring to antiseptic solutions, he believes that the antiseptic properties of corrosive sublimate, for instance, are strengthened by the addition of tartaric acid, as in the following mixture:

R Corrosive sublimate, 1 gramme (15 grains);  
Tartaric acid, 5 grammes (75 grains);  
Boiled distilled water, 1 litre (1.7 pints).

A combination which, according to Salomon, guards against poisoning by the sublimate is as follows:

- R Corrosive sublimate, 1 gramme (15 grains);  
Tartaric acid, 5 grammes (75 grains);  
Chloride of sodium, 1 gramme (15 grains);  
Sulphate of copper, 2 grammes (30 grains);  
Boiled distilled water, 1000 grammes (32.1 ounces).

Boric acid is also largely used, not so much on account of its antiseptic properties as owing to its innocuousness. It is recommended in the strength of 3 to 1000, or, like the bichloride, it may be employed in such mixtures as the following:

- R Boric acid, 25 grammes (6¼ drachms);  
Phenic acid, 1 gramme (15 grains);  
Thymol, .30 gramme (5 grains);  
Alcohol to dissolve, q. s.;  
Boiled distilled water, 1000 grammes (32.1 ounces).

Thymol, considered as an excellent antiseptic, is best combined as follows:

- R Thymol, 1 gramme (15 grains);  
Alcohol at 85° F., 4 grammes (1 drachm);  
Distilled water, 995 grammes (31 ounces).

For the medication of baths some combinations are recommended. For an alkaline bath, for instance, the following formula may be used:

- R Crystallized trisulphate of sodium, 60 grammes (2 ounces);  
Crystallized chloride of sodium, 60 grammes (2 ounces);  
Carbonate of sodium, 30 grammes (1 ounce).

Where the use of corrosive sublimate becomes necessary, either of the two following mixtures may be employed:

1. R Bichloride of mercury, 20 grammes (5.4 drachms);  
Alcohol at 90° F., 50 grammes (1 ounce, 5.4 drachms);  
Distilled water, 200 grammes (6.76 ounces).
2. R Bichloride of mercury, 15 grammes (4.16 drachms);  
Chlorhydrate of ammonium, 15 grammes (4.16 drachms);  
Distilled water, 500 grammes (16.90 ounces).

#### THE ABSORPTION OF GUAIACOL THROUGH THE SKIN.

G. LINOSSIER and M. LANNOIS (*Lyon Médical*, April 1, 1894) publish the details of a series of experiments carried on to determine the cutaneous absorption of guaiacol. From the results obtained in the experiments described the authors draw the following conclusions:

1. Guaiacol, locally applied, is absorbed by the skin.

2. The absorption is very rapid, the remedy appearing in the urine fifteen minutes after its application. The proportion of guaiacol in the urine increases gradually, reaching its maximum in from one and a half to one and three-quarters hours. The elimination is almost complete in twenty-four hours.

3. In the total urine of twenty-four hours the proportion of guaiacol recovered has been 55.5 per 100, when the amount of the drug used has been from 2 to 4 grammes (30 to 60 grains). The absolute quantity of guaiacol recovered from the urine after an application of 4 grammes was 2.2 grammes (34 grains); in another instance, 3.3 grammes (50 grains), after an application of 10 grammes (2.58 drachms).

4. The cutaneous absorption is so pronounced that the organism may be saturated with guaiacol without having to resort to the ingestion of the drug by the mouth or subcutaneously.

#### THE ACTIONS OF CHLORIDE OF METHYLENE, CHLOROFORM, AND TETRACHLORIDE OF CARBON.

The above substances have been studied experimentally by J. F. HEYMANS and D. DEBUCK (*La Presse Médicale Belge*, April 1, 1894). They find that all those agents increase, in the rabbit, the elimination of urea, of phosphates, and of chlorides. The authors believe that the three substances enhance the activity in the secretion of urea, phosphates, and chlorides in the tissues themselves. This action is made manifest with a rapidity proportionate to the toxicity of each one of the agents under consideration.

#### THE TREATMENT OF CHRONIC INTERMITTENT FEVER.

In a communication, SPIRIDION KANELIS, of Athens (*Bull. Génér. de Thérapeutique*, April 15, 1894), recommends the following line of treatment in cases of chronic intermittent fever. The patient is advised to take every morning four pills of the following combination:

- R Sulphate of quinine, 11.25 grammes (2.81 drachms)  
Arsenate of sodium, .03 gramme (½ grain);  
Extract of cinchona, q. s.  
M. and make thirty pills.

The four pills are to be taken for two weeks without interruption; they are then stopped for a week, to be resumed for a second period of two weeks, and so on during a course of three months. At the same time, the patient must

take twice a day, at noon and at night, and without interruption, during the three months of treatment, before meals, a cup of this mixture :

- R Bark of royal cinchona, .30 gramme (5 grains);  
Absinthe herb, .30 gramme (5 grains).  
For an infusion the quantity of which should be  
700 grammes (21.8 ounces),  
Dry extract of cinchona, 3.75 grammes (2.81  
scruples);  
Cognac, 60 grammes (2 ounces).

In the morning, two hours before taking the pills, the patient is to take a glass of milk. At noon the meal should consist of strong bouillon, beefsteak, eggs, and old wine; the same *régime* at night, and the patient should get to bed as soon after this last repast as possible. The author affirms to have treated five hundred and twenty patients, using the above method, in the course of ten years, with the most excellent results.

#### TRIONAL.

K. RYCHLINSKI (*Kronika Lekarska*, February, 1894) tried trional in fourteen cases of sleeplessness in neurotic or insane subjects, in doses varying from .5 to 4 grammes. The total number of observations amounted to one hundred. In several cases he carried out comparative experiments with other hypnotics (sulphonal, chloral hydrate, sulphate of dyboisin). He found that,—

1. Trional acts admirably, especially in cases of insomnia due to functional disturbances in the nervous system.
2. It does not affect in the least the cardiac action, even when heart-disease is present.
3. It has no bad taste and is easily soluble in hot tea or milk.
4. The patient awakens without any disagreeable sensations about the head.
5. The sleep-giving dose is smaller in comparison with other drugs of the kind.
6. On the whole, trional should be preferred to all our ordinary hypnotic remedies.—*British Medical Journal*, April 21, 1894.

#### THE TREATMENT OF NEPHRITIC COLIC.

In *L'Union Médicale* for March 31, 1894, the following advice is given in regard to the treatment of this condition. The pain is to be relieved by a hypodermic injection of morphine, and a large hot bath given every hour or hour and a half during the day. The patient is to be nourished by soups and con-

centrated foods, and should drink large quantities of Vichy and other mild alkaline waters, but cold milk and frozen champagne are not to be taken. Hot applications of counter-irritants should be applied to the abdomen and hypogastrium, and it may be well to administer a few drops of spirit of chloroform, or, should the pain become excessive, inhalations of chloroform or ether through the first stage of anaesthesia may be practised. If the stomach will stand it, morphine and belladonna may be given. In other cases, in addition to the treatment which has been named, and between the attacks, it is well to administer 8 grains of benzoate of lithium at each meal, the same quantity of salol, or a teaspoonful of the following mixture, chloroform being supposed to have a distinct antilithæmic influence :

- R Chloroform-water,  $\overline{\text{z}}$ iii;  
Syrup of oranges,  $\overline{\text{z}}$ ii.  
A tablespoonful after each meal.

The food should consist between the attacks of white meats, salads, artichokes, salsify, celery, milk, red and white wines, which should be dry, and a mild alkaline mineral water. The fresh fruits are also advisable, and the grape- or raisin-cure is useful. Of the foods to be avoided we find tomatoes, asparagus, peas, beans, all alcoholic drinks which contain much sweets or much gas. We may allow in very small quantities cold meats, eggs, fish, crabs, potatoes, and a very small quantity of bread. The patient must be told to masticate his food thoroughly, and to drink before going to bed large quantities of Vals water or that of Contrexéville, or, for that matter, any pure water which will dissolve effete materials. Constipation should be avoided, and the garments should be so made as to avoid taking cold. Every morning a small teaspoonful of powdered Rochelle salt in water may be used. The bladder should be frequently emptied. Exercise is very useful, such as walking or gymnastics. Should the patient perspire freely, he must be carefully rubbed dry after the exercise is over, and every morning should take a sponge-bath, followed by hard friction with a rough towel. Alkaline baths should be taken at least two or three times a week. The internal medication between the attacks should consist not only in the use of benzoate of lithium, in the dose of 20 grains a day in one or two doses, but an active diuretic treatment should be instituted. For the production of a general alkaline influence bicarbonate of sodium may be freely taken, or the following employed :



R Bicarbonate of sodium, gr. xxx;  
 Powdered tartaric acid, gr. xv;  
 Calcined magnesias, gr. x.  
 Make into one powder and take after meals.

Should there be gravel due to oxalates, the patient must avoid foods which are rich in oxalic acid, such as tomatoes and rhubarb, and we should administer 15 grains of phosphate of sodium after each meal and on going to bed at night. In those cases where concentrated meat soups have been taken and a condition of oxaluria produced, the patient should be obliged to give this up and to rely chiefly upon milk and eggs for nourishment.

#### A NEW TREATMENT FOR DIPHTHERIA.

BIANCHINI (*Gazz. degli Ospitali*, March 20, 1894) describes a method of treating diphtheria, which consists in the local application to the neck of the patient of fomentations moistened with a two-per-cent. solution of carbolic acid in lead lotion, these being applied at as early a stage as possible, with the idea of acting on the micro-organisms of the local lesions, and thus preventing their further spread. Application in this way secures the absorption of the phenol, both through the skin, which appears to be easy in the case of children, and also in the form of vapor through the mouth. This has been supplemented in the most serious cases by painting the pharynx, etc., with the following pigment:

Salicylic acid, 45 grains;  
 Absolute alcohol, 6 drachms;  
 Resorcin, 30 grains;  
 Glycerin, 3 drachms.

To be applied two or three times daily.

The result has been very satisfactory. Out of forty-five cases of varying severity, the duration of treatment varied from six to eighteen days on an average, but in one case was as long as thirty days. To these forty-five cases are appended notes of nine others treated by other practitioners, in every case successfully. —*British Medical Journal*, May 5, 1894.

#### TREATMENT OF ATONIC GASTRIC DILATATION.

WEGELE (*Münch. Med. Woch.*, March 28, 1894) deals with the severer forms of this disease, and not with such as accompany any gastric affection lasting over any considerable time. For the practical distinction of mild from severe cases the test breakfast is useful: in marked cases remains of food are found in

the water used for washing out the stomach on the following morning, whereas in mild cases the stomach is able to deal with such moderate demands. Pronounced atonic dilatation is not, in the author's opinion, such a rare event as is sometimes represented. At first the dry diet was employed, and for slighter cases it sufficed; but a rigorous carrying out of this regimen was often of disadvantage. Washing out the stomach proved a great advantage, as in this way the stomach was freed of very acid and fermenting contents. Here, however, a considerable amount of nourishment is withdrawn, and the patient's nutrition and weight may suffer. Rectal alimentation must, in addition, be had recourse to; either water alone or the desirable food-stuffs may be thus used. The amount of urine passed is a practical measure of the gastric insufficiency. By a strict dry diet and supplying the necessary water by the rectum, the patient's condition may be very greatly improved. Clysters containing grape-sugar are apt to ferment and to produce diarrhoea, and the same is true of those containing peptone, frequently repeated. The diet must be suited to the condition of the gastric chemistry. If hyperacidity is present, large doses of alkalies are indicated. Washing out the stomach is, according to the author, best done in the morning. Raising the foot of the bed is said to be useful in helping to empty the pyloric antrum. If fermentation is present, harmless antiseptics should be added to the water, and salicylic acid, creosote, and bismuth salicylate given internally. If the abdominal walls are lax, a belt should be used. The author says that the prognosis is considerably improved by the use of the dry diet and supplying fluid by the rectum.

#### THE EXTRAORDINARY EFFECTS OF A LARGE DOSE OF HYOSCINE.

In the March number of the *Indian Medical Record*, ASSISTANT SURGEON BALAGOPAL, L.M.S., relates the case of a man, fifty years old, who was an inmate of the Chhatrapur Hospital, suffering from mania. For twenty-five years he had had maniacal attacks, each of which lasted at least a month, after which he gradually recovered his sanity and remained quite sane for six or seven months. He had been treated by various eminent physicians, but only with the result of tempering the violence of his maniacal paroxysms; the attacks continued to occur twice a year. At last, after having been forced to retire from his work as a post-office employee, he had asked the author to treat him, remarking that life was a burden, and that he would

rather poison himself than suffer any longer from his dreadful disease. Two or three days after this a severe attack of maniacal delirium occurred, and the author tried divers sorts of nervine, sedative, and antispasmodic medicines, together with the use of plasters, blisters, and setons, but all proved of no avail. As a last resort he gave the patient a hypodermic injection of  $\frac{1}{6}$  grain of hyoscine hydrobromide. In two or three minutes after the injection the patient fell down prostrate upon the ground and cried out that he was dying. His face became deadly pale and the conjunctivæ insensitive. The pupils were extremely dilated, the breathing was very difficult and stertorous, the limbs were contracted spasmodically, the pulse was very weak and compressible, and the temperature was subnormal. The author, being very much alarmed at the man's condition, hastened to his bookcase to ascertain the proper dose of the medicine, and, to his utter dismay, found that it was from .03 to .01 grain, while he had given  $\frac{1}{6}$  grain. Feeling that he had unwittingly poisoned the poor maniac, he began to stimulate him by means of hypodermic injections of 20 minims of sulphuric ether every half-hour. After the third injection the spasms were seen to diminish in frequency and in strength, and after the fourth they ceased, the conjunctivæ responded to the touch, and the breathing became a little easier; at the same time the color was seen to return to the man's face. In half an hour after the fifth injection the man tried to open his eyes and to speak; after this he improved gradually and recovered consciousness in five or six hours after he had received the dose of hyoscine. After this the patient improved day by day, and in the course of a week he was of sound mind, and had since shown no signs of cerebral trouble.—*New York Medical Journal*, April 28, 1894.

#### A PRESCRIPTION FOR ULCERATION OF THE STOMACH.

In the *Journal de Médecine de Paris* for March 6, 1894, the following prescription is given for cases of chronic gastric ulcer:

- R Chloroform,  $\mathfrak{m}\text{xv}$ ;  
 Subnitrate of bismuth, gr.  $\text{xlv}$ ;  
 Distilled water,  $\mathfrak{z}\text{iv}$ .  
 1 to 2 teaspoonfuls every hour or two.  
 Shake well before taking.

If the case is severe and there is much gastralgia this prescription is particularly useful for the relief of the pain.

#### GAVAGE.

HOLT, of New York, writes an article on this subject in the *New York Medical Record* for April 28, 1894.

The technique of gavage is very simple. The ordinary apparatus used for stomach-washing is all that is required,—viz., a funnel, eighteen inches of rubber tubing, a soft-rubber catheter, and a few inches of glass tubing for connection. The catheter should have a double eye; No. 14, American scale, is the best size for infants under six months, and about No. 17 for older children; a 4-ounce funnel is large enough for infants, while for older children it is an advantage to use one holding six or eight ounces. The child is placed flat upon the back in its crib, and the head steadied by an assistant. The tongue is depressed with the left forefinger, and the catheter, previously oiled, is pushed rapidly down the pharynx until nine or ten inches have passed the lips. The funnel is now raised high in the air for a few moments to allow gas from the stomach to escape. The food is poured into the funnel and rapidly runs into the stomach. As the last of the food leaves the funnel the catheter is tightly pinched and quickly withdrawn. This last step is an important one, in order to prevent trickling of food in the pharynx, which may provoke vomiting. Sometimes the food remains in the funnel and will not run into the stomach. This is not ordinarily from blocking of the eye of the catheter by mucus, but from gas in the tube. In a few moments this generally rises to the surface of the liquid, and then the food flows readily. If regurgitation of the food takes place, it is generally immediately after withdrawing the tube. In many cases it may be prevented by allowing the gas to escape from the stomach before putting the food in, and in others by holding the jaws separated for a few moments after the catheter has been withdrawn.

In young infants no gag is required, but in older children one is quite necessary, since otherwise they may bite the catheter in two. Where a gag is needed, the ordinary one accompanying intubation sets will answer the purpose. Two assistants are usually required to feed an older child. It is important that the child should be held flat upon its back.

The time consumed in feeding by gavage is from ten to thirty seconds. In infants this is very easily done. In the institutions referred to all the nurses have been taught to do it, and they learn, with very little experience, to do it very quickly.

The uses of gavage may be briefly stated as follows:

1. In premature infants its value has been well established on the continent of Europe, in connection with the use of the incubator. As yet we have had but little experience with it in this country.

2. It is useful in controlling persistent vomiting in very young infants, where the vomiting occurs partly from habit and partly from exaggerated pharyngeal reflex. Dr. Kerley's published paper established this point conclusively, and subsequent experience has confirmed his observations. Dr. R. B. Kimball, attending physician to the Summer Branch of the Babies' Hospital, is soon to publish a large number of cases treated in the summer of 1893, also confirmatory of this point.

3. In acute diseases where, for any reason, children refuse all food, or struggle violently against everything that is offered them. In very many cases of severe illness in children from two to five years of age, the point is reached, after four or five days have passed, when the child absolutely refuses to take anything, and nothing is got down excepting by holding the nose. This is one of the most promising fields for the application of gavage. In very severe cases of scarlet fever, diphtheria, broncho-pneumonia, typhoid, and empyema just this necessity is felt.

4. In serious brain-disease where the patient cannot be fed by ordinary means. This may occur in tubercular meningitis, chronic meningitis, and in many other diseases where delirium or coma is a symptom. Life is not only prolonged, but existence made more tolerable, and the patient is much more easily cared for by the attendants.

#### *PERSISTENT SNEEZING UNDER CHLOROFORM ANÆSTHESIA.*

In the *Indian Medical Gazette* for April, 1894, CHALKE reports the case of a well-proportioned Hindoo male, aged thirty-four years, who was admitted into the Berhampoor Municipal Hospital as an in-patient, suffering from complete staphyloma of the right cornea with disorganization of the eyeball, requiring extirpation. He had, besides, granular lids of the same eye of some years' standing.

As it was decided to remove the eyeball, the patient was placed on the operation-table and chloroform administered. When he was completely anæsthetized, the district surgeon adjusted the stop speculum into the affected eye.

Almost immediately this was done the pa-

tient began sneezing persistently for a couple of minutes and recovered consciousness. In the mean while the speculum had to be removed. The patient was again chloroformed, and when completely under its effects the stop speculum was again adjusted, when the sneezing reappeared, the patient recovering consciousness as before. For the third and last time the inhalation was repeated, when the same events occurred on adjusting the speculum. As he had already inhaled a large quantity of chloroform, it was thought advisable to postpone the operation to a subsequent date. After the lapse of four days he was a second time placed on the operation-table and chloroform was administered, a hypodermic injection of  $\frac{1}{2}$  grain of cocaine having been previously given. He was very quickly anæsthetized, and the speculum being adjusted, the sneezing commenced again and the man recovered consciousness. He was again chloroformed, but on this occasion a four-per-cent. solution of cocaine was dropped into the affected eye at frequent intervals as a local anæsthetic. When completely narcotized the stop speculum was adjusted, but no sneezing occurred, and the operation was performed without any further trouble.

When the patient was chloroformed on the first occasion (three times), it was puzzling to discover the cause of sneezing, especially when the patient was completely anæsthetized,—a stage when all reflex actions are temporarily abolished; but on carefully judging the time of the occurrence of the sneezing, soon after the adjustment of the speculum, the idea of combining the effects of cocaine as a local anæsthetic suggested itself, which was adopted only on the second occasion, but not until there had been a repetition of the sneezing as on the first occasion. The cocaine had the desired effect of deadening the morbid sensibility of the eye and stopping reflex action.

In order to illustrate the physiological action of sneezing in this particular instance, the author explains briefly how this most probably occurred.

It has been stated that the eyeball was chronically affected for some years from granular conjunctivitis and complete staphyloma of the cornea; consequently the sensory nerves of these structures must have participated in the inflammatory process and became hyperæsthetic. The distribution of these nerves is briefly as follows:

The nasal nerve,—a branch of the ophthalmic,—as it passes the inner side of the orbit, gives off three branches—the long and short ciliary and the infratrochlear—which supply

sensation to the cornea, sclerotic, conjunctiva, and the integument of the side of the nose.

The nasal nerve then passes through the shallow groove in the cribriform plate of the ethmoid, and divides into an internal and external branch, supplying the mucous membrane and integument of the nose with sensation. It therefore appears that the irritation caused by the pressure of the speculum on the hypersensitive nerve-filaments must have been transmitted to the nose by the nasal nerve, and excited the persistent sneezing so characteristic in this case, just in the same manner as the sun's light falling strongly on the eye produces a tickling in the nose.

The next question which naturally suggests itself is, Why should reflex action occur when the patient is completely anæsthetized? To explain this particular point the following is quoted: "All parts of the body do not become insensible in equal times; certain portions of the skin and subcutaneous tissue retain their sensibility with extraordinary tenacity; these are the matrix of the great toe-nail, the margin of the anus, and the whole of the skin of the organs of generation. It is impossible to obliterate their sensibility without pushing chloroform to a degree which greatly surpasses that required for ordinary purposes."

As mentioned previously, the patient was perfectly anæsthetized and the conjunctivæ and cornæ insensible to the touch of the finger, and the man was, for all ordinary purposes, sufficiently narcotized for the operation; but owing to the hyperæsthetic condition of the nerves of the eye, reflex action was not completely annihilated, and the speculum being of a hard nature, pressing forcibly on the nerves excited the sneezing, so singular in this case.

#### ACTION OF STRYCHNINE ON THE PANCREAS.

D. N. AGRICOLANSKY made twelve experiments on four dogs with an artificial pancreatic fistula, which show that,—

1. When given in considerable doses, nitrate of strychnine markedly inhibits the pancreatic secretion, the latter finally ceasing altogether in from ten to thirty minutes after the administration; subsequently, however, the inhibitory effects slowly cease.

2. Smaller doses either produce no impression whatever, or may even slightly increase the secretion.

3. There is no definite correlation between a general physiological action of the drug and its inhibitory influence on the gland.

4. Qualitative changes of the juice are but slight and inconstant, and, when present, seem to be caused rather by alterations in the concentration of the juice than by the action of the drug on the formation and secretion of the pancreatic ferments.

5. In the presence of small quantities of strychnine in the juice, saccharification of starch proceeds more extensively than under the ordinary conditions, while the proteid digestion remains unaltered. When present in a large proportion, the drug retards the digestion. —*British Medical Journal*, April 7, 1894.

#### PERMANGANATE OF POTASSIUM AN ANTIDOTE TO MORPHINE.

HARDING contributes his ideas on the chemical side of this question to the *New York Medical Record* of April 14, 1894, in which he says that the observations made by Dr. Moor, to hold a 1 to 2000 solution in his mouth for fully five minutes without any serious deoxidation of the permanganate of potassium, is no criterion of its non-decomposition in the buccal cavity or its connecting parts, for alkaline properties, or an alkalinity of the contents of any cavity, favor the non-decomposition, and the decomposition of the permanganate in an alkaline fluid proceeds but very slowly. A test-tube full of water (which contained soluble organic substance) which had been made alkaline, and to which had been added a few drops of solution of permanganate of potassium, did not begin to discharge its color for nearly an hour. Acid solutions favor the decomposition of the permanganate, and the advice to give an acid of some kind in case of opium-poisoning, or in case of any of the salts of morphine, and vinegar being advised by Dr. Moor, is erroneous beyond measure; for do not text-books teach, and experience has proved, that acetic acid especially decomposes permanganate?

The action of the permanganate upon albumin and peptone is a criterion only so far as they go, for the stomach usually contains starches, etc., in addition to albuminoids and peptones; starches especially decompose the permanganate quickly; raw starch has but little action upon it, but boiled starch in any form quickly demands its attention. We may say that people do not eat much boiled starch. This idea is, however, quite erroneous, for potatoes and bread contain a large amount of starch, which is only partially acted upon by the alkaline secretion of the mouth during mastication; it lies dormant in the acid fluid

of the stomach, but is converted and absorbed in the small intestines; this starch, also, while it lies dormant in the stomach, quickly attacks the permanganate. Were nothing to interfere, 1 grain of permanganate of potassium would be able to oxidize more than 1 grain of morphine, so almost anything, if taken in doses large enough, may prove an antidote for morphine. Now, suppose the morphine has entered into the circulation, would this still be counteracted by the permanganate? The advocates of this remedy may say yes, for has not Dr. Hitzig, of Halle, proved beyond doubt that morphine which has entered into circulation will return to the stomach, be secreted there by the glands, and acted upon by the permanganate as fast as secreted? This is very nice in theory, but in practice, how about the glandular coating of the stomach? Will this not be partially destroyed by the continued contact with the permanganate, and thus secretion likewise be destroyed? We have grave fears of corrosion. As has been mentioned before, deoxidation would quickly take place in acid media; this assumption is without doubt true, for were it not so the permanganate would certainly be absorbed, enter the blood, and cause disturbance there. The latter not being the case, is quite conclusive evidence that oxidation of the lining of the stomach must result, and any poison having entered the circulation is sure to stay there unless counteracted by physiological antidotes; the proposition to give hypodermic or intrarenal injections of the permanganate seems ridiculous, for the blood would soon annihilate it.

We will not attempt to state here, at the present, what changes would occur, but we may easily judge what might happen when we stop to consider the composition of blood,—namely, fibrin, serum, albumin; and we can draw conclusions as to what the probable results would be; and it seems more ridiculous when we remember that 1 part of permanganate of potassium is soluble in not less than 16 parts of water, and that at this state of solution it possesses very corrosive properties, and would quickly destroy any oxidizable substance; and as at the rate of dilution at which the doctor uses it by the stomach—namely, 2 grains to the ounce—it would take quite an amount for injection, how foolish to accept this as rational!

The French Academy of Sciences at one time largely used permanganate of potassium for flushing the stomach, and suffice it to say, that it required quite a number of douches successively to eject the solution in its characteristic color. This would go to show that it

does not require very much to destroy the permanganate, and we are very sceptical as to accepting any statements made in relation to the permanganate as antidote for morphine in face of the damaging evidence of its chemical behavior.

#### THE TREATMENT OF THE HECTIC STATE.

In an article published in the *New York Medical Record* for April 14, 1894, STARK asserts that the treatment carried out by himself with satisfaction is as follows: Speaking of the drugs which can be used for the alleviation of the symptoms, the therapeutic indications have reference to the colliquative sweat, the chill, the nervo-muscular prostration, and the hyperpyrexia. So far as the treatment of the hyperpyrexia is concerned there is nothing new to offer. In regard to the treatment of the colliquative sweat and the prostration, however, he puts himself on record in favor of two drugs which have served him admirably, after having experimented with a variety and having subsequently discarded them. These drugs fulfil the physiological and pathological indication in a way that commends them favorably to all practitioners. They are, for the sweat and prostration, atropine, and for the prostration and circulatory disturbances, strychnine. For several years, both in public and private practice, it has been a matter of routine with the writer to combine the salts of atropine and strychnine in a palatable manner in the treatment of this fever complex, and he has up to date yet to learn of a more effective combination. A serious drawback to the freer employment of these powerful drugs has always been the imminent danger of miscalculating the dosage or in committing a chirographical or a mathematical error in writing the prescription or in having it compounded. One physician of the author's acquaintance has stricken these drugs from his personal pharmacopœia on that account. It would appear that this *quasi* obstacle ought not to militate against their use, as it could readily be overcome, to the interest both of the public and of the profession, with a little precision, heroism, and self-confidence on the part of the practitioner.

The mode of operation of these drugs is of importance. It is known that both are cardiac tonics, under certain conditions, which do not at all antagonize each other, inasmuch as they act differently on different functions. Thus, atropine, according to therapeutists, has a paralyzing action on the inhibitory fibres of the pneumogastric and at the same time stimulates

the cardiac ganglia of the sympathetic ; strychnine increases arterial tension and the force of the apex-beat. Further, atropine, if properly administered, will check the profuse sweat that so surely exhausts and prostrates, and will also allay the irritability of the central nervous system. Strychnine is the remedy *par excellence* as a general tonic for the nerve-centres ; in this respect it is almost a specific. The exhaustion and depression caused by the nerve-centre poisoning find here a remedy which strikes at the very root of the affection, without in any way impairing the cerebral functions. Some writers discourage the employment of strychnine in the acute stage of spinal disease, but the writer's experience does not warrant such a conclusion, as he has yet to note an untoward effect or an unpleasant result. *En passant*, he recalls a very serious case of hectic fever accompanying a pyonephrosis, in which there was a daily collapse for three successive days, due to the hectic phenomenon. Strychnine and atropine were administered to the exclusion of all other drugs, and he believes they were the means of tiding the victim over the critical period until an operation was deemed advisable, by economizing his vitality and strengthening the circulation and innervation. The mode of administering these drugs is as follows: He usually combines both salts of the alkaloids in pill form. Of atropine, the adult dose should be  $\frac{1}{100}$  to  $\frac{1}{80}$  grain ; of strychnine,  $\frac{1}{100}$  to  $\frac{1}{80}$  grain. They should be administered one or two hours before the anticipated chill in one large dose, or else in divided doses t. i. d. He usually gives atropine  $\frac{1}{100}$  and  $\frac{1}{80}$  grain strychnine to adults. So far as the atropine is concerned, its effects are delayed at times for one or two days, or its influence may be extended over a like period. Slight atropinization occurs at times, but tetanization never. On this account it is preferable to study the idiosyncrasy of the patient and his tolerance by administering each drug independently at first. He never employs any preparation except the alkaloids themselves, and even in the case of children this rule applies with double strength, for it is an ordinary observation that they tolerate atropine much better comparatively than adults do.

The administration of these alkaloids in no way interferes with the action of other drugs that may be employed for the reduction of temperature ; on the contrary, they enhance their value by counteracting the depressing effects on the heart of the synthetical antipyretics of recent date. It is scarcely necessary to state that not all cases of hectic fever are to be combated with atropine and strychnine,

singly or conjointly. There are many instances of this fever which entirely abate directly the local source of irritation is removed. The point intended to be emphasized is this, that these drugs are of decided benefit for the amelioration of the symptoms in those cases where the pus nidus cannot be precisely located, or where operative procedures are advisedly delayed or expressly abandoned for conservative reasons. In that type of hectic which consists merely of chill and hyperpyrexia, atropine should be discarded.

The following are some formulæ which cover the points brought out by this paper and which are employed by the author :

When hyperpyrexia is insignificant, but the chill, sweat, and prostration are the prominent features :

R Strychninæ sulph., gr.  $\frac{1}{3}$  ;  
Atropinæ sulph., gr.  $\frac{1}{10}$  ;  
Extr. gentianæ, q. s.  
M. et ft. in pilulas No. xii.  
Sig.—One t. i. d.

When all the symptoms are present :

R Strychninæ sulph., gr.  $\frac{1}{3}$  ;  
Atropinæ sulph., gr.  $\frac{1}{10}$  ;  
Antifebrin,  $\mathfrak{z}$ i.  
M. et ft. in capsulas No. xii.  
Sig.—One t. i. d. aut p. r. n.

When the sweating stage is absent, but the temperature and prostration predominate :

R Strychninæ sulph., gr.  $\frac{1}{3}$  ;  
Phenacetin,  $\mathfrak{z}$ ii ;  
Caffein citratis, gr. xxiv.  
M. et ft. in oblat. No. xii.  
Sig.—One wafer t. i. d. aut p. r. n.

#### MASSAGE AND THE BLOOD.

J. K. MITCHELL publishes his second communication on this subject in the *American Journal of the Medical Sciences* for April, 1894.

To sum up, first, the certain results: In health, massage increases the number of red corpuscles, and to a less degree and not so constantly their hæmoglobin value.

In all forms and grades of anæmia there is a very constant large increase in the number of red corpuscles after massage ; this is greatest at an interval of about an hour, after which it slowly decreases. This decrease is postponed more and more if the manipulation be daily repeated. An improvement also takes place in the general tone of the circulatory and muscular systems.

There is an occasional but inconstant increase in the hæmoglobin value, and this in-

crease is proportionately less great than that of the cellular elements.

It has been doubted if so powerful and fatiguing a method of treatment as massage is safe or desirable in very high grade anæmias. It is now for the first time made clear that it is of great and certain service and without danger in such cases, no matter how feeble.

It is evident, too, that our present definitions of anæmia are insufficient. An essential part of the description in all of them is that there are defects of number, of color, or of both in the blood; this is not necessarily true. The fault may lie in a lack of activity or of availability in the corpuscles. The state of things in the system may be, to draw an analogy from economic conditions, like the want of circulating money during the times of panic, when gold is hoarded and not made use of, and interference with commerce and manufactures results.

Lastly, neither an anæmic appearance nor a blood-count is alone enough for a certain diagnosis. Other signs must be used as a check on the blood examination for the establishment of the existence of anæmia; for instance, many cases here recorded had full normal or even supranormal corpuscle-count, with a good percentage of hæmoglobin; yet they presented every external sign of poverty of blood: pallor of skin and, more important still, of mucous membranes, cold extremities, anorexia, indigestion, dyspnoea on trifling exertion. In such cases we must suppose either that the total volume of the blood is reduced, or that the usefulness of the corpuscles is in some way impaired, or that both these troubles exist together.

The white corpuscles have not received sufficient attention in this study, although it seems as if in most cases they were increased as well as the red.

#### ELECTRICAL TREATMENT OF OBESITY.

IMBERT DE LA TOUCHE (*Rev. Internat. d'Électrothérapie*, August, 1893) has obtained favorable results from electrical treatment in certain cases of obesity in which the symptom had developed as part of a general disorder of nutrition or neurasthenic state in women. Regulation of the diet, as usually prescribed for the diminution of stoutness, made the patients worse. Five cases are reported. The method employed was by insulation and the statical charge, daily or three times a week. Excellent results followed; in every case the symptoms of debility disappeared, the abnormal stoutness disappearing also. The author writes enthu-

siastically of the efficacy of this mode of treatment.—*British Medical Journal*, May 5, 1894.

#### SPINA BIFIDA—A CURE BY IODINE INJECTIONS.

In the latter part of February of the present year WOODYARD (*Virginia Medical Monthly*, May, 1894) was called to see Willie M., aged two months. He was informed that the child had a tumor in the lumbo-sacral region of the spine, and that the midwife in attendance wanted to poultice the same.

He found that he had a spina bifida to deal with. At this time the tumor was about the size of a goose-egg, sessile, translucent, and fluctuating; all the skin covering the tumor, except a place in the centre about the size of a ten-cent piece, was in good condition. When the child cried, the tumor would bulge out and become tense.

In treating this case, conservative methods were employed for a few weeks, until the patient was in good condition, when Dr. J. R. Boyd was called in consultation. As the tumor was growing rapidly, and from all indications would soon rupture, they decided to use iodine injections, thinking they would give the patient a chance, at least, for its life. Accordingly, they aspirated one drachm of fluid from the tumor, and immediately injected into the tumor one drachm of,—

R Iodini, gr. x;  
Potassii iodidi, gr. xxx;  
Glycerini, C. P., ℥i. M.

Following this injection a slight degree of coma was manifest, which lasted about twenty-four hours. The tumor became slightly inflamed for a day or two; after this there were no effects of the treatment appreciable. At the expiration of one week the same treatment was repeated. No coma was shown; the tumor became inflamed within twenty-four hours; the patient was very restless, and refused to nurse. From this time on the skin became wrinkled and the tumor began to diminish in size, and at the end of the third week it had almost entirely disappeared. Nothing remained but a bursa about the size of a twenty-five-cent piece. The patient is now in good condition.

#### IMPETIGO.

R Ung. sulphur., ℥ii;  
Ung. zinci ox., ad ℥i. M.

This application can be employed freely for impetiginous eruptions, and is particularly of ser-

vice for very extensive cases in which mercurial preparations are contraindicated, owing to the risk of poisoning taking place from absorption.

Or,

R Plumbi acetatis, gr. viii;  
Acid. hydrocyan. dil., ℥ii;  
Sp. rectificati, ℥ss;  
Aq. destil., ad ℥viii. M.

For lichen urticatus: A similar ointment to that just given, containing usually a larger proportion of sulphur, gives great relief, especially if the itching papules be first pricked or scratched with a needle.—*Medical Press and Circular*, April 25, 1894.

#### GUAIACOL IN THE TREATMENT OF ORCHITIS.

R Guaiacol, ℥ss;  
Vaselini, ad ℥i. M.

Smear some of the application over a piece of lint and apply it to the scrotum. The pain of the inflamed testis will be much relieved, the relief lasting several hours. The dressing should be renewed twice or thrice daily.

—*Medical Press and Circular*.

#### A NEW TREATMENT OF PULMONARY TUBERCULOSIS.

Dr. Cohn, of Hamburg, has found ichthyol very useful in the treatment of pulmonary tuberculosis. He administers the drug in the following form:

R Ichthyolis,  
Aq. destill., of each, ℥v. M.

The patient begins to take 4 drops of this solution thrice daily, and then the dose is increased by 1 drop daily until the maximum amount of 40 drops three times a day is reached. The best time of administration is before meals. Generally speaking, patients become readily accustomed to the disagreeable taste of ichthyol, but a mouthful or two of black coffee is very efficacious in removing the taste. The ichthyol is said to be far superior to creosote or cod-liver oil.—*Medical Press and Circular*.

#### A PRESCRIPTION USEFUL IN DENTALGIA.

R Tinct. gelsemini, m℥xv;  
Tinct. ferri perchlor., m℥x;  
Syr. aurantii, ℥ss;  
Aq., ad ℥i. M.

For one dose. To be repeated thrice daily.

—*Medical Press and Circular*.

#### A PRESCRIPTION FOR EXTERNAL HEMORRHOIDS.

R Chrysarobin, gr. xvi;  
Iodoformi, gr. vi;  
Ext. belladonnæ, gr. xii;  
Vaselini, ℥vi. M.

A small quantity to be applied to the swellings several times daily, the parts having been previously washed with a solution of carbolic acid (1 in 5).

—*Medical Press and Circular*.

#### HÆMATOPORPHYRINURIA AFTER TRIONAL.

SCHULTZE (*Deut. Med. Woch.*, February 15, 1894) first refers to the cases of hæmatoporphyrinuria after the use of the closely-allied sulphonal. From time to time unpleasant symptoms have appeared after the administration of trional, such as fatigue on waking, slight digestive troubles, very rarely ataxy or stupor, with marked cyanosis and vomiting. Koppers has warned against its use in cardiac disease. The author records the following case in a woman, aged fifty-four, with melancholia. Other remedies against sleeplessness having been used in vain, trional was given in a single evening dose of  $\frac{1}{2}$  to  $1\frac{1}{2}$  grammes, and continued during four or five weeks, twenty-four to twenty-five grammes having been taken in all. Towards the end of this time the patient became worse without any discoverable cause. She had to be artificially fed, and constipation was marked. The patient was taken out a few days after the drug was stopped, and she died a little later. A few days before her discharge the urine appeared of a dark red (almost black) color, and was proved both chemically and spectroscopically to contain hæmatoporphyrin. It is striking that so small a quantity of trional should have had so deleterious an effect. The loss of appetite and severe constipation are to be attributed to it. All the reported cases of hæmatoporphyrinuria after sulphonal, as also the above one, have occurred in women. Trional must be used continuously with caution, and stopped at once if a red color appears in the urine. That this coloration of the urine may be one of the first symptoms of poisoning by sulphonal has been shown by Schaeffer.—*British Medical Journal*, April 7, 1894.

#### DULCIN.

KOBERT (*Centralblatt f. Inn. Med.*, April 21, 1894) says that pure saccharin is described by many as not being really sweet. Dulcin has a pure sweet taste, and excels saccharin in sweetness some two hundred to two hundred and fifty times. In structure it is an aromatic urea



derivative—paraphenetol carbamide—and is allied to phenacetin. It is soluble in eight hundred parts of water at 15° C., in fifty of hot water, and in twenty-five of ninety-seven per cent. alcohol. Experimentally, dulcin has been shown to be harmless to rabbits, but in dogs, which are more susceptible to its action, the evidence is somewhat conflicting. From his own experiments on cats the author concludes that doses corresponding to such as would be used in man are harmless; with abnormally large doses the cats became ill, and eventually died with cerebral symptoms. In diabetes it must be used in relatively small doses. Ewald has given it in doses up to 1.5 grains in the day. The author concludes that dulcin in reasonable doses is, so far as we know at present, harmless, and is an advance upon the use of saccharin, owing to its sweeter taste. It does not bring about any decomposition of the blood.—*British Medical Journal*, May 26, 1894.

#### MALAKIN.

F. MERKEL (*Munch. Med. Woch.*, April 24, 1894) observes that this drug has been recommended as an antipyretic, antirheumatic, and antineuralgic. It is a salicylic derivative, and contains about fifty per cent. of salicyl aldehyde; thus, four grains correspond to a little more than two grains of salicylic acid. The author has tried malakin in eighteen cases,—fifteen of acute rheumatism, two of enteric fever, and one of neuralgic pains in typhlitis. Its action is very mild, and no unpleasant by-effects are noted; at most, the profuse perspirations generally following its administration might be looked upon as unpleasant; perhaps the quality of the pulse suffered occasionally. The drug has a distinct antipyretic effect, but this is not permanent. As an antirheumatic it can produce a decided improvement in the articular manifestations. In fifteen cases of acute rheumatism a favorable effect was noted in nine, and in two of these other remedies had been used without benefit. The author looks upon malakin as an addition to our resources where other remedies fail. Whether it can be given like the salicylates in larger and more frequent doses remains to be shown.—*British Medical Journal*, May 26, 1894.

#### CARE OF THE MOUTH IN SICK PERSONS.

ROSENBAACH (*Zeit. für Krankenpflege*, April, 1894) says that in many illnesses there is almost sure to be secondary trouble in the mouth if preventive measures be not taken. A warn-

ing sign is dryness and redness of the tongue and mucous membrane of the mouth, with difficulty in swallowing; further signs are an evil odor from the mouth, coated tongue and gums, bleeding of the gums, etc. Just as special care of the mouth is required in patients with carious teeth, smokers and chewers of tobacco, so it is also in the case of unconscious or paralyzed persons; patients with fever or suffering from chronic digestive complaints; those taking medicines, such as mercury or iodides, or who, on account of general weakness, have to take strong alcoholic drink; but perhaps the most important class of those in whom special care of the mouth must be taken are patients with fever. Parasites are always present in the mouth, but it is only when the tissues are weakened that they undergo invasion by these parasites. There is nothing which one can do for sick persons which is unimportant, and by neglect in the care of the mouth convalescence may be retarded.

Rosenbach concludes with the following rules:

1. Patients with good digestive powers, free from fever, and with no loss of consciousness require no more than the ordinary care of the mouth.

2. In children and very old patients the less solid food taken the greater should be the care with the mouth. They should rinse the mouth out several times a day with lukewarm water containing a little common salt, tincture of myrrh, or eau de Cologne added to stimulate secretion. When there is a tendency to bleeding of the gums, or when the teeth are bad, a pinch of powdered boric acid may be twice daily rubbed in between the lips and gums. Patients with false teeth should remove their false teeth when, owing to loss of appetite or chronic gastric disturbance, they cannot take solid food.

3. In patients with partial loss of consciousness the mouth should be examined several times a day for small sores, such as may arise from the pressure of the teeth on the lips, etc. Such sores should be powdered with a little boric acid or chlorate of potassium, and the cracks at the corners of the lips heal quickly if dried with a clean towel and treated with boric acid or vaseline. The mucous membrane may be stimulated by wiping the tongue and mouth and pressing on the tongue with a moist towel every two or three hours; if necessary, the hinder part of the tongue should be cleansed with a wad of cotton-wool fastened to a stem. If the patient sleep with the mouth open, the air in the room must be kept moist; a moist-

ened layer of muslin laid on the mouth may be of some service.

4. Patients with fever should have something to drink—cold water or weak lemonade—at least every hour; one must not wait until the patient asks for drink. Besides preventing dryness, the fluid maintains the activity of the glands and the whole function of the mucous membrane. Many patients are prevented from drinking by a painful, dry, and cracked condition of the lips, and therefore all feverish patients should from the commencement of their illness have their lips rubbed several times a day with vaseline or fat. In protracted cases of fever the mouth may also be swabbed out with oil, fat, or greatly-diluted glycerin.—*British Medical Journal*, May 26, 1894.

*NEEBE'S TREATMENT OF SWEATING  
FEET BY CRUDE HYDROCHLORIC  
ACID.*

When the feet are very tender, especially in hot weather, treatment is preceded by an eight to ten days' application of compound talc powder, which is sprinkled in the stockings. The application of the acid is best made in the evening. The crude hydrochloric acid is poured into a flat vessel of stone or glass or porcelain, sufficiently large to receive the two feet. Since the soles of the feet and the skin between the toes are the seat of the trouble, sufficient hydrochloric acid is poured into the vessel to completely cover the soles. It should not be allowed to come in contact with the skin of the back of the feet. The heel is kept in the acid for five minutes; then the sole of the foot for ten minutes. After this the feet, especially the skin between the toes, are washed in soap and warm water. Soaking in the acid must be at once stopped as soon as pain is excited, and the painful spots must be treated with zinc ointment until healing is complete. The process of soaking may be repeated twice weekly, and continued for from five to eight weeks in obstinate cases.—*Medical Press and Circular*, May 2, 1894.

*HÆMOPTYSIS.*

In the *British Medical Journal*, April 21, 1894, FOXWELL writes of this subject, and thinks the rationale of its treatment is simple. It can be divided into two parts: (1) when the hæmoptysis arises from lung-mischief secondary to cardiac failure, and (2) when it is due to primary lung-disease.

The hemorrhage occurring in cardiac disease

is due to a degeneration of the endothelium with consequent thrombus in a branch of the pulmonary artery, owing to feeble circulation, thus causing an infarct, the hemorrhage itself arising from necrosis of a vessel or vessels in the infarcted area from inflammation in the tissues surrounding it. But the tension of blood is very low, the effused blood quickly clots and lies against the opening, the blood within the vessel looks on this clot as a foreign body, and forms a thrombus upon it which soon occludes the bleeding-point. The indication in cardiac hæmoptysis is, therefore, to prevent a repetition, and to effect this we have to strengthen the heart by horizontal rest and such tonics as strychnine and digitalis; personally, the writer finds subcutaneous injections, or rather intramuscular ones,—for it is high time we did away with the term subcutaneous,—of liq. strychninæ in the doses we are accustomed to give it by the stomach—3 to 5 minims thrice daily—to be the most efficacious of all means for stimulating the weakened musculature of the heart.

Should the initial cardiac hæmoptysis be very severe, we must at first have recourse to the treatment for hæmoptysis due to primary lung-disease; but even then we must be very chary in adopting measures which depress the heart.

In primary disease we should look upon the bleeding-point much as a surgeon would look upon a bleeding vessel in a sloughing ulcer of the leg, which he had to treat without the aid of any surgical skill. The writer believes he would be very ill advised to employ ergot or any other vaso-motor contractor, for the vessel in the neighborhood of the bleeding-point is diseased, its muscle fibres are degenerated, and therefore the drug will act less upon them than upon the fibres of all the other arterioles of the body; the injured arteriole it will not contract, but it will raise the pressure of the blood within it by its effect on all the healthy arterioles; the result will, therefore, be an increase rather than a lessening of the bleeding, unless, indeed, you should so press your ergot that the general contraction resulting produced heart-failure, and in this way lessened the flow of blood at the bleeding-point, though not to so great an extent as would occur elsewhere. This procedure cannot for a moment commend itself; it is a far more dangerous and a far less efficacious method of producing heart-failure (that is, faintness) than nature's own. She does it by bringing the tension of the blood to a minimum, and the blood ceases to gush from the extreme weakness of the propelling force;

there is the rest of sheer exhaustion, and during it, mechanical and chemical (not physiological) forces create a plug for the hole in the relaxed and flaccid vessel. All the arterial system is in a state of half-empty flaccidity, so that the feeble flickerings of the heart have every encouragement to continue, for nature has provided that it shall have the least possible work to do. And so life is kept going with the smallest possible amount of blood-pressure, thus allowing the plug the best possible chance of establishing itself. But in ergot faintness the blood, so long as it moves at all, must move under considerable pressure, and hence plugging will be much less likely to take place. Moreover, the strong contraction of the arterioles gives the worn-out heart far less rest, and it has to re-establish the circulation in the least instead of the most advantageous circumstances.

As to ergot, the author has given it a fair trial. His routine treatment when resident medical officer at the General Hospital was 30 grains of Bonjean's ergotine injected deeply into the muscles of the buttock. No injurious effects followed, local or general, nor was he ever able to definitely associate any cessation in the hæmoptysis with its use. But even were it good to contract the arterioles of the lungs, how do we know that ergot will do this? As stated before, the calibre of the pulmonary vessels is under very different governance from that of the systemic ones, and there is no evidence to show that ergot can contract them.

Venesection is sometimes of value at the outset. If the pulse be strong, the individual full-blooded, or if venous congestion exist, then it is easy to see how a timely venesection may diminish the loss of blood; for half a pint of blood withdrawn quickly will lower tension, etc., as much as a pint removed slowly; that is, the quick withdrawal of blood by venesection may do at once what nature is striving to accomplish more slowly,—namely, produce a faintness of the circulation.

Again, anything which keeps the blood in the systemic circulation, and so produces anæmia of the lungs, is beneficial. We know that the splanchnic area can contain all the blood of the body; any therapeusis, therefore, tending to fill this area must be good; large doses of nitrites, which relax the systemic arterioles, should thus prove of service, as well as the constant supply of small portions of food, so as to keep up a constant demand for blood in the alimentary tract.

To fulfil the same end ligatures may be applied to the thighs and upper arms to prevent

the blood reaching the right heart, a procedure well spoken of by Walshe. Leeches to the anus or a hot foot-bath have proved similarly useful. Till faintness come on, the sitting posture is preferable; in this way the head is less supplied with blood, and so less able to stimulate the heart's action than if the horizontal position were maintained.

Any means which may increase the coagulability of the blood is evidently of value. It is for this reason that the swallowing of gallic acid is recommended, though the method of its action is unknown to the author; nor does he think the evidence in its favor is considerable. That it does reach the blood in these cases is shown by the fact pointed out by Wood, that the blood spat up after its exhibition often has a greenish hue.

In July, 1893, Professor A. E. Wright, of Netley, made a communication to the *British Medical Journal* on "The Value of Calcium Chloride as an Increaser of the Coagulability of the Blood." He showed, also, that in too large doses it delayed greatly the period of coagulation. In cases of chronic bleeding—for example, hæmophilia—doses of 5 grains taken thrice daily were most beneficial, but to produce a sudden and complete effect, such as would be our desideratum in severe hæmoptysis, a large single dose of  $\frac{1}{2}$  drachm would obtain the maximum effect, which, in the professor's own case, reduced the coagulation time of his blood from four to one and three-quarters minutes.

Of all measures for the relief of hæmoptysis, perhaps the induction of vomiting has the strongest clinical value of any; but the rationale of its action is certainly obscure, and, though he has thought much about it, the author is not in a position to offer any elucidation of the problem. It matters little what drug be employed for the purpose, whether it be a local irritant, such as salt and water, or one acting on the centre, such as antimony. Personally, he prefers antimony, as it produces relaxation of the systemic arterioles as well.

Hydragogue purgatives are of extreme value, as they deplete the abdominal organs, and so enable them, in turn, to drain other parts of the body. Among them calomel possesses a double virtue, as mercury is one of the best, if not the best, drugs we possess for lowering arterial tension. Its great antiphlogistic power adds still more to the efficacy of mercury.

The great thirst which often accompanies prolonged bleeding is best assuaged by the sucking of small pieces of lemon, as the exhibition of fluid drinks, except as nutriment, is to

be deprecated, our aim being to keep the quantity of the blood as low as possible and its quality as concentrated.

A cool atmosphere is supposed to be advantageous. There is no doubt that it is so in the case of epistaxis, and the nose is one portion of the respiratory tract; so it is hoped that it will be so to the vessels of the lung parenchyma, though we must remember, first, that, whatever the temperature of the outside air may be, that in the air-sacs is constant; and, secondly, cold air is a stimulant to cardiac action,—an action we wish to depress; hence he believes a warm room to be preferable.

Another important aid with which nature has provided us is the most capable ligature in the elasticity of the lungs. As blood is effused and more blood from the right lung takes its place within the vessel, the effused blood distends those alveoli into which it flows, and the elastic walls of these, in turn, increase the pressure which they had previously exerted, and so press the effused blood with increasing force against the ruptured wall of the vessel. This natural ligature it is evidently our duty to aid by all the means at our disposal, and for this reason he would shun any method of therapeutics which would accentuate the act of inspiration, such as the inhalation of astringent sprays.

The application of an ice bag to the præcordium, inasmuch as it is a powerful cardiac depressant, is valuable, but, in so far as it chills the surface of the body, it is undesirable. As ice in some form or other is usually importuned for by the patient, it is perhaps well at once to resort to this method of its exhibition, and the bag will be most wisely placed upon the præcordium. As to its local application over the bleeding-point, even if we could accurately localize this, its advisability is to be doubted, owing to our want of knowledge of the effect of cold on the pulmonary vaso-motor nerves and of the depth to which the cold of an ice-bag can penetrate. Experimentally, but not clinically, it seems to have been shown that the cutaneous application of ice to the chest has produced local anæmia of the subjacent lung.

He concludes the paper with the exhortation, "Above all things, let the thought of morphine be kept ever in mind." As a chain's strength is that of its weakest link, so is the hæmoptotic force of a circulation that of its strongest pulse. One strong beat may thrust away the plug which many feeble predecessors have allowed to form. A vascular serenity is, therefore, an absolute essential in the treatment of hæmoptysis.

#### SCOPOLAMINE IN OPHTHALMIC PRACTICE.

RAEHLMANN (*Wiener Medizinische Wochenschrift*, No. 20, 1894) thinks that scopolamine resembles in its action hyoscyne, but that it surpasses in valuable qualities all other mydriatics. He refers to his previous investigations with scopolamine, already reported in the THERAPEUTIC GAZETTE. His first observations were made with the hydrochlorate of scopolamine, but now he prefers the hydrobromate. A one-per-cent. solution of it acts more energetically than atropine in inflammation of the anterior portion of the eye,—for example, iritis,—and also causes the subsidence of pain more rapidly. It may be used in much more active dose, because it seems nearly free from poisonous symptoms, and even when unpleasant accidents occur they are not dangerous. In his clinic, where one-tenth- and one-fifth-per-cent. solutions are used, occasionally one-half- and one-per-cent. solutions are employed and continued for some time. Sometimes they are without effect on the general condition; at other times there is dryness of the throat and a staggering gait resembling drunkenness. He refers at length to the difference in the physiological action of scopolamine and atropine upon the general condition, showing that the heart's action of the two is an exactly opposite one; so, also, are their effects upon the brain. He concludes by assuming that all experiences thus far reported indicate that scopolamine is a much more desirable mydriatic than atropine.

#### A NEW PROCESS OF SIMPLE MUSCULAR ADVANCEMENT.

MOTAIS (*La Médecine Moderne*, May 9, 1894) thinks that simple muscular advancement is indicated (1) in paretic strabismus of five to fifteen degrees, which is not being affected by general treatment; (2) in cases of strabismus in young children; (3) in cases of persisting deviation, not exceeding twelve degrees, which resists optical and orthothalamic treatment; (4) in compound strabismus, when the superior deviation does not disappear after correction of the internal strabismus; (5) in muscular insufficiency, except in myopic insufficiency. The present process of simple muscular advancement is defective, because the antagonistic muscle causes the sutures to loosen. Motais proposes a new process, in which he uses two threads, each supplied with a needle at the two ends. The first is basted two millimetres from the line of insertion all along the tendon. One

of the needles of the second thread is basted in the same way two millimetres behind the first; the tendon is cut close to its insertion. The two superior needles are then passed under the conjunctiva, which they cross in a line with the vertical meridian. The same thing is repeated with the inferior needles. The tendon is drawn to the desired place and the threads tied on the bridges of the conjunctiva which they separate. The threads are left in place for eight days and the eye covered with a bandage.

#### SUBCONJUNCTIVAL INJECTIONS OF SUBLIMATE.

GAGARIN (diss. St. Petersburg, 1893; abstract *Archives of Ophthalmology*, January to April, 1894) used repeated injections of sublimate in many cases of iritis gummosa, plastic iritis with various complications, irido-choroiditis after recurrent fever, different forms of irido-cyclitis and irido-choroiditis, parenchymatous keratitis, corneal ulcer with hypopyon, different injuries with their consequences, episcleritis, absolute glaucoma, disseminate chorio-retinitis, optic neuritis, and trachomatous pannus. He obtained good and rapid results in hypopyon keratitis, irido-cyclitis, and irido-choroiditis, the hypopyon disappearing. The continuation of the injections did not cause much further improvement. In the various forms of iritis the result was also good. In parenchymatous keratitis and episcleritis no improvement was obtained. In one of two cases of pannus there was a considerable clearing up of the cornea in a short time. The proper dose is a quantity occupying two or three divisions of a Pravaz syringe of 1 to 1000 solution. Stronger solutions cause local symptoms of irritation. It was rarely necessary to make more than three or four injections, and often one or two were sufficient. The effect on pain was very marked when three per cent. of cocaine nitrate was added to the sublimate solution. The necessary general treatment and the local use of mydriatics should not be neglected.

PENNOW (abstract *ibid.*), in one hundred and forty cases of different eye-diseases, used subconjunctival injections of sublimate (1 to 3000 and 1 to 2000, one to four divisions of a Pravaz syringe every three to six days). The pain produced was not marked. The constant swelling of the conjunctiva lasted two to seven days. The effect was particularly good in beginning purulent iritis and irido-cyclitis after cataract extraction; in traumatic cyclitis with

beginning sympathetic ophthalmia the injections were made in both eyes; both were cured, and enucleation was not necessary; in chorio-ditis, chorio-retinitis, and neuro-retinitis, particularly when syphilis was the cause, and in one obstinate case of diffuse opacity of the vitreous. In hypopyon keratitis, parenchymatous keratitis, and in a case of embolism of the central artery of the retina considerable improvement was obtained. In atrophy of the optic nerve (three cases) the effect was doubtful. In most of the cases the indicated general treatment was not neglected.

LAGRANGE (*Annales de la Policlinique de Bordeaux*, No. 19, March, 1894) has especially employed subconjunctival injections of sublimate in the treatment of interstitial keratitis. They are used in conjunction with cocaine and therefore are painless, and in almost every case have caused a much more rapid cure than with general medication alone. He, however, uses this general medication in conjunction with the subconjunctival injections. In one case of specific neuro-retinitis an excellent result was obtained.

M. GROSSMAN (*Annales d'Oculistique*, April, 1894), in the Medical Society of the Hospitals of Buda-Pesth, reports his experience with this method of treatment, especially in two cases of chronic retrobulbar neuritis. The first of these patients received during intervals of six and eight days fourteen injections, and the second eighteen injections from  $\frac{1}{10}$  to  $\frac{1}{5}$  milligramme of sublimate, and the sight sensibly improved. In one case of chronic glaucoma the sight is said to have been improved when iridectomy failed. Another surgeon, who has performed a great number of injections, attributes special value to them in affections of the vitreous body and in choroiditis.

#### THE CONTINUOUS CURRENT IN ACUTE IRIDO-CHOROIDITIS.

DR. PANSIER (*Annales d'Oculistique*, April, 1894) writes concerning the use of continuous currents in chronic iritis, and refers to the fact that it is not a new thing, as Carnus, twenty years ago, reported several observations on the disappearance of irido-capsular attachments under the influence of voltaic electricity. Pansier has used the continuous currents in similar cases without obtaining a satisfactory result; in fact, he could not accomplish the complete resolution of the exudations nor the entire disappearance of the synechiæ, although there was manifestly a sedative influence.

In view of the successful action of the con-

tinuous currents in the subacute period, he concluded to try them in acute inflammations, and he was soon able to experiment upon a patient suffering from exceedingly painful and obstinate irido-choroiditis. He details a number of observations of this character, and then proceeds to say that the sedative effect is lasting; the pain does not always disappear after the first or second treatment, but never continues after the sixth.

In all of these experiments he used a battery of eighteen small elements of zinc and carbon. In this voltaic pile the exciting liquid is alum, which has the advantage of producing a weak and constant current which does not exceed five milliampères. The electrodes consist of two sponges dipped in a solution of chloride of sodium. The negative pole is applied to the eyelid and the positive pole towards the mastoid process in the region of the superior cervical ganglion; each treatment lasts from five to twenty minutes. He attributes the good effect to an influence upon the nutrition of the eye exercised through the vaso-motor system, producing a calming and antispasmodic effect. He is by no means willing to grant too much to electricity, but looks upon it as an adjuvant to other treatment.

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*THE INJECTIONS OF A SOLUTION OF THE OIL OF BINIODIDE OF MERCURY IN THE TREATMENT OF THE OCULAR MANIFESTATIONS OF SYPHILIS.*

PARISOTTI (*Annales d'Oculistique*, April, 1894), after referring to the work of Vibert, observes that the biniodide of mercury was used in ocular therapeutics, in association with the iodide of potassium, by Dr. Martin, in the form of hypodermic injections, and that this treatment was recommended by Fisher in 1889. The idea of using an oily substance belongs to M. Panas.

The following is the formula and the manner of its preparation:

Pure olive oil, 1000 parts;  
Ninety-five-per-cent. alcohol, 300 parts.

The mixture is left for four or five days, being shaken from time to time. The alcohol floats on the surface and is then separated. This relieves the oil of the oleic acid. The oil is then placed in a porcelain capsule for ten minutes and heated to a temperature of 110° to 113° C. This sterilizes the oil and removes the traces of

the alcohol. When the temperature of the oil has again fallen to 60° C., four parts of the biniodide of mercury are added, and the mixture is shaken until the mercury is completely dissolved. The solution is strained through sterilized cotton and preserved in a sterilized bottle. Each gramme of oil contains four milligrammes of the biniodide of mercury.

Recent discussion in the treatment of the ocular symptoms of syphilis in the French Society of Ophthalmology showed the danger of the use of insoluble salts of mercury in the treatment of this disease. Parisotti has been careful to experiment thoroughly before advocating the preparation which he describes. He records a number of cases thus treated, including interstitial keratitis, iritis, and paralysis of the external ocular muscles, and believes that these cases prove that the injections are very valuable because their action is rapid. Nevertheless, he has never witnessed in any case so instantaneous an effect as he has observed with calomel. With calomel he has seen synechiæ break down, iritis and its pain disappear, and pericorneal injection subside in a few hours. Biniodide of mercury requires a longer time, but still it possesses many advantages over calomel, although the dangers of the latter drug have been exaggerated. In summing up, he believes that the biniodide of mercury is very useful, but that when the danger is great, and when the conditions are such that rapid action is required, hypodermic injections of calomel should be employed. It is interesting to observe that his patients at the same time took large doses of iodide of potassium.

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*TREATMENT OF GRANULAR OPHTHALMIA.*

LAGRANGE (*Annales de la Policlinique de Bordeaux*, No. 19, March, 1894) contends that acute granulations should not be treated surgically, but in chronic cases, especially when the granulations are large, surgical treatment produces better results than other methods. He believes that the scraping of the granulations should be followed by brushing with a sublimate solution (1 to 500), and he employs a special instrument for this purpose,—a species of curette, curved on its back and containing on its convex surface small teeth, which scrape away the granulations, but do not penetrate too deeply. He is satisfied with surgical treatment, although he is unwilling to assert that he has cured every patient, and is content with the belief that they have been much benefited.

*THE EXTERNAL USE OF QUININE IN BLENNORRHOIC OPHTHALMIA.*

DR. GEORGE REICH-HOLLENDER (*Archives of Ophthalmology*, January to April, 1894) treated cases of gonorrhœal ophthalmia and ophthalmia neonatorum in the usual manner,—namely, with iced compresses, nitrate of silver, and frequent cleansing with a mild antiseptic solution; and after failing to get a good result with a one-fourth-per-cent. solution of permanganate of potassium, concluded to try quinine alone as an eye-wash every hour, and did it with the happiest results. It should be noted, however, that he continued to use nitrate of silver and iced compresses. He believes that quinine, either completely or partially dissolved, is a specific in the ravages of the gonococcus, either in gonorrhœal ophthalmia or in ophthalmia neonatorum. His formula is as follows:

Sulphate of quinine, 2.  
Dilute muriatic acid, .75  
Distilled water, 180.

Sig.—Shake well and use as an eye-wash every hour.

[Quinine lotion in the treatment of purulent ophthalmia is an old remedy. It has also been much employed, on Tweedy's recommendation, in membranous and diphtheritic ophthalmias.—ED.]

*MORPHINE HYPODERMICALLY AS A MEANS TO PREVENT PROLAPSE OF THE IRIS IN SIMPLE EXTRACTION.*

DR. EUGENE SMITH (*Archives of Ophthalmology*, January to April, 1894) recommends, after the toilet of the eye, subsequent to cataract extraction, a drop of a 1-grain solution of salicylate of eserine into the conjunctival cul-de-sac and a hypodermic injection of  $\frac{1}{4}$  grain of the sulphate of morphine. He then waits a few minutes and allows the patient to go to bed, where he remains from twenty-four hours to two days. Eight hours after the first hypodermic injection of morphine he gives another, and the following morning a third. This generally keeps the pupil contracted from thirty-six to forty-eight or more hours. The morphine injection relieves the discomfort immediately following the operation, produces tranquillity, checks a cough, if present, and does away with involuntary traction of the recti or orbicularis muscles. Given hypodermically, according to Dr. Smith, morphine does not produce vomiting. He does not pretend to explain the action of morphine, except that he believes it produces contraction of the pupil

and that he has demonstrated to his own satisfaction its usefulness under the conditions recommended.

*CORRECTION OF STRABISMUS.*

LAGRANGE (*Annales de la Polyclinique de Bordeaux*, No. 19, March, 1894) believes that children with convergent strabismus should not undergo operation if they are under the sixth year of age. After this, and when the strabismus is marked,—twenty or twenty-five degrees or more,—he has recourse to a surgical operation without waiting for stereoscopic exercises, which do not appear to be entitled to a definite place in practice, except as complementary to surgical treatment. He believes that double tenotomies are suitable for cases of alternating strabismus almost equally distributed to both eyes and both suffering from some defect of refraction to an equal degree. When only one eye is strabismic, a correction should be applied to it alone, cutting a shorter tendon, and if this is not adequate, by adding to it capsular or muscular advancement. Operations performed with the aid of cocaine alone are more satisfactory. Those done under the influence of anæsthesia cause a disturbing factor, because the eyes of the anæsthetized patient are directed upward and outward. He believes it is very important to attempt to get binocular vision by means of suitable stereoscopic exercises. It is most important after an operation to watch the patient for a long time, and always as long as the sutures are in place, in order to loosen or tighten them, according to circumstances.

*A SUGGESTION OF AN OPERATION TO CORRECT ASTIGMATISM.*

DR. W. H. BATES (*Archives of Ophthalmology*, January to April, 1894), after referring to the well-known fact that contraction of corneal scars produces permanent corneal astigmatism, details several cases of this character, from which his suggestion to operate for astigmatism has been derived. The following propositions are submitted:

1. A corneal incision lengthens the radius of curvature of that corneal meridian which is at right angles to the line of the incision, and does not flatten any other meridian. The astigmatism produced is a regular astigmatism, and is corrected by a convex cylinder at an axis parallel to the line of the incision.
2. The immediate result is greater than the ultimate result.
3. The astigmatism produced is permanent

after a length of time,—at least a month after the cornea has healed. There may be at first 3.D. of astigmatism produced. At the end of a month there may be 2.D. At the end of three months the astigmatism may still be 2.D., and this amount of astigmatism will be permanent.

4. The amount of astigmatism produced is greater the nearer the incision is to the centre of the cornea; as much as 9.D. can be produced.

5. Mixed astigmatism occurs: (a) temporarily; (b) with incarceration of the iris.

*The Operation suggested.*—Incisions of the cornea are made at right angles to the most convex meridian. The amount of correction can be regulated by the number, depth, and location of the incisions.

The operation promises a permanent effect. The risk to the eye is not great. It is not as dangerous an operation as the operation for iridectomy, which is usually performed without accident. Incarceration of the iris must be avoided to prevent the development of myopia.

#### IMMEDIATE CAPSULOTOMY FOLLOWING THE REMOVAL OF CATARACT.

DR. L. WEBSTER FOX (*Journal of the American Medical Association*, June 2, 1894) writes as follows concerning his method of capsulotomy:

After the delivery of the lens (cataract) and all cortical matter is washed out of the anterior chamber, he proceeds with the rupturing of the posterior capsule. The instrument used is a gold-enamelled hook, made as delicately as is consistent with keeping its shape. It is of malleable steel, so that it may be bent to any angle which he finds convenient, especially when the eye of the patient lies deep in the orbit. The hook is passed into the anterior chamber, and behind the lower pupillary margin of the iris, on its flat side. It is then rotated backward, hooked into the capsule, drawn gently upward to the mouth of the incision, rotated on its flat side again, and then taken out of the chamber. By this means the capsule is torn and the vitreous presses forward between the rent. Very little or no vitreous shows at the mouth of the wound; if it does, he snips it off.

When the operation is performed after the simple method (without iridectomy), the same manipulation is carried on, with but one exception, and that is, the line of incision is not so long. The ophthalmostat is removed and the eyeball again irrigated with the hydrostatic eye-

douche, followed by dropping one drop of sterilized atropine solution into the eye; the lids closed and thickly anointed with vaseline, which has been sterilized by boiling; over this specially-devised eye-pads, which have also been sterilized by heat, held in place by adhesive strips, which keep the bandages securely fixed, permitting the patient to change his position in bed as often as is desirable. In twenty-four hours the dressings are removed and both eyes bathed with warm water and irrigated with the sulpho-carbolate solution, another drop of atropine applied, and similar eye-pads adjusted with as much care as at the primal operation, and so continued from day to day until the eye is out of danger.

#### TREATMENT OF EPITHELIOMA.

DARIER (*La Médecine Moderne*, May 12, 1894) has obtained excellent results with the following dressing: First dry the ulcerated surface, then cauterize with any cautery,—thermo-cautery, galvanic-cautery, or, still better, chromic acid,—and finally use a solution of 1 to 100 of methyl-blue, either in repeated paintings or in interstitial injections. Recovery often follows at the end of one or two months. Abadie, from personal observation, believes that the chromic acid is unnecessary, and that the methyl-blue alone is effective. He points out that the improvement is often exceedingly slow, and months may pass without appreciable change, and this probably accounts for the fact that it has been abandoned by many practitioners.

#### ANTIPYONINE AND ITS EMPLOYMENT IN OCULAR THERAPEUTICS.

ROLLAND (*La Médecine Moderne*, May 12, 1894) has used antipyonine for three years exclusively in the treatment of keratitis and conjunctivitis. His experience, which has resulted from one thousand patients, has caused him to believe that no other medicament could have resulted in so many cures. The drug should only be applied by physicians, and insufflated in small, large, and excessive quantities, according to the condition. In small quantities it is suitable for phlyctenular keratitis, mild degrees of pannus, fascicular keratitis, hyperæmia of the conjunctiva, and phlyctenular conjunctivitis. In large quantities it is effective in the treatment of abscess, ulcers of the cornea, fleshy pannus, catarrhal, follicular, and granular conjunctivitis. It is indicated in



very large quantities in purulent conjunctivitis, panophthalmitis, after enucleations, and in large traumatism.

*PURULENT OPHTHALMIA: TREATMENT, ETIOLOGY, AND PROPHYLAXIS.*

ABADIE (*La Médecine Moderne*, May 12, 1894) points out that, although in laboratory experiments weak solutions of sublimate, carbolic acid, iodoform, naphthol, resorcin, and permanganate of potassium destroy the virulence of the gonococci, they do not accomplish this result when this microbe is found in the living tissue of the conjunctiva. All substances are then powerless to avert the evil. They have not a really curative action; they can only arrest to a limited extent the fatally progressive evolution of purulent ophthalmia. Nitrate of silver, on the contrary, has a truly specific and consequently truly curative effect on the gonococci, even when they develop in their favorite element, the human conjunctiva. Sometimes, if it is used too soon and in the earlier stages of the disease, it causes a very unfortunate change in the character of the inflammation, which assumes a diphtheritic aspect. As a general thing, the strength of the solution should not exceed three per cent., but the application should be thorough, so that the entire surface of the conjunctiva is reached, and the superficial slough which results should be entirely removed before a second application is made. He thinks that boracic acid, sublimate, and permanganate of potassium (1 to 1000) are about equal in their effects, but prefers during the intervals of the active applications of nitrate of silver a solution of the same drug (1 to 1000) in continuous sprayings, as recently recommended by Burchardt.

*MAGNET OPERATIONS FOR THE EXTRACTION OF PARTICLES OF IRON FROM THE INTERIOR OF THE EYE.*

HILDEBRAND (*Archives of Ophthalmology*, January to April, 1894) reports sixty-six magnet operations performed by Dr. Mayweg during eleven years, with fifty-three successes. When an iron foreign body in the interior of the eye is recognized with certainty, its extraction is indicated, even if it is firmly attached to the background, and it is advisable to operate as soon as the presence of the foreign body can be ascertained. If it is impossible to locate the foreign body, it is safer to wait until the media have cleared than to stir the vitreous

extensively. Mayweg believes that local anaesthesia is fully as good as the general anaesthesia recommended by Hirschberg. Hirschberg advises immediate explorative probing with the pointed electrode through the original wound; Mayweg introduces the magnet, apart from the cases in which severe inflammation is present, only when the foreign body can be diagnosed with certainty and its seat determined.

*MINOR PLASTIC OPERATIONS ABOUT THE EYE.*

H. GIFFORD (*Archives of Ophthalmology*, January to April, 1894) has modified the ordinary operation for canthoplasty in cases of coma in which the palpebral fissure is very much reduced in length, while the conjunctiva is so atrophic that after lengthening the fissure one cannot easily get enough membrane to prevent the cut from growing up again. His modification consists in covering the cut surfaces made by lengthening the fissure with two small Thiersch flaps, the surfaces being first widened slightly by turning out the skin above and below with stitches, the needle being first passed through the skin at the edge of the cut, then over a small roll of wet cotton, and through the skin again beyond the roll. He has done six operations in this way without failure.

In cases where entropion and trichiasis co-exist, with partial ankyloblepharon, he commonly first lengthens the palpebral fissure, then splits the edge of the lid, as in Thiersch's operation, extending the incision at the outer extremity until it passes into the raw surface made by the cut to lengthen the fissure. Then, after turning back the outer flap with stitches passed over a cotton splint, as before described, the gap in the edge of the lid is filled with a Thiersch's flap, or a strip of lip membrane cut long enough to extend clear to the extremity of the newly-lengthened palpebral fissure.

Gifford has made use of Thiersch's flaps in repairing losses of the conjunctiva, and his experience, on the whole, is satisfactory, although not in every instance. In cicatricial entropion he combines the Wolfe and Thiersch flaps,—that is, he first places upon the surface a Wolfe flap, and after eight or nine days, when the breaking down of the epithelium of the flap indicates the usual necrosis of the upper layers, he scrapes and cuts these away until healthy bleeding tissue is reached, and then applies a large Thiersch flap.

### THE EYE-TREATMENT OF CHOREA.

DR. A. L. RANNEY (*Medical Record*, May 5, 1894) contributes an article upon this subject, and respecting the relationship of chorea to the anomalies of the visual apparatus he draws the following conclusions:

1. Choreic subjects belong to one of two classes: (a) those who tend to get well under almost any treatment, or even without treatment, and (b) those who fail to get relief from any medicinal aid. The latter tend to run a chronic course, usually one of unfavorable progression.

2. The chronic form of chorea is one of the most serious and hopeless of nervous maladies when treated by drugs alone. It is not infrequently associated with epilepsy or with mental impairment later in life. Chronic sick-headache may often be developed, and sometimes asthenopic symptoms are quite prominent.

3. Both forms of chorea are based, as a rule, upon a well-marked neuropathic or tubercular predisposition.

4. The pathology of chorea is not known. No one has ever proved that it was a "constitutional disease," in the sense that an organic lesion was essential to its development.

5. The percentage of hypermetropia (usually latent) in choreic subjects is extremely large (apparently about seventy per cent.). He makes it a rule, with few exceptions, to correct the total error of refraction in choreic subjects fully by glasses. Often atropine has to be instilled into the eyes at frequent intervals, for a time, in order to arrest ciliary spasm, and enable the patient to accept a full refractive correction without marked discomfort.

6. The glasses ordered for choreic patients should be most carefully fitted to the face and accurately centred to the pupils.

7. An investigation for latent heterophoria should always be made in choreic subjects with the greatest of care and patience.

8. The relief of marked heterophoria should be finally attained only by graduated tenotomies upon the muscles exhibiting abnormal tension, or by an advancement of the tendons of the muscles exhibiting defective power.

9. Prismatic glasses are not curative. They should not, as a rule, be prescribed for constant use.

10. Choreic subjects are usually rapidly cured by eye-treatment alone. So large has been the percentage of recoveries to the total number seen by him during the past ten years, that he has come to regard the prognosis of chronic chorea as extremely favorable.

11. The eye-problems encountered in choreic subjects are not, as a rule, as complicated and difficult to solve as those of epileptics; nor, in his experience, is the duration of eye-treatment apt to extend over as long a period before very decided benefit is observed.

12. He believes that the spasmodic movements which accompany and indicate organic lesions of the brain—as, for example, those of a lepto-meningitis—exist in but a small proportion of choreic subjects, and are usually associated with other evidences of disease.

That organic lesions of the brain and spinal cord may produce choreic movements of an extreme type cannot be denied; but it is wise, in his experience, to be slow in giving an unfavorable prognosis in any case until all possible reflex causes of chorea have been thoroughly investigated and corrected.

13. The removal of young choreic subjects from school, or of adult choreic patients from business, is a step commonly taken by most physicians while treating chorea by drugs.

It must be apparent to all thinking minds that the rest thus given to the eyes and nerve-centres is a factor in the recovery of acute cases of chorea that is as important clinically as the drugs employed.

### THE ABUSE OF COLLYRIA.

DE WECKER (*La Médecine Moderne*, May 9, 1894), after referring to the necessity of having sterile collyria, is of the opinion that it is unnecessary after every case of extraction to instil atropine on the second or third day and to continue these instillations until recovery is complete, believing that the most perfect cures are observed when, after an extraction properly performed, there is no instillation of collyria.

The use of impure collyria in the treatment of ulcers of the cornea is productive of serious results, and he thinks that ulcers should be treated (1) by careful disinfection of the eyelids and particularly of the palpebral edges; (2) by curetting the ulcers and spraying them, so as to remove all infected parts; (3) by injections of several drops of a solution of sublimate (1 to 2000) under the conjunctiva in the region of the diseased part; and (4) by the rigorous application of a compressing bandage without the use of collyria.

In the discussion which followed, Armaignac agreed with De Wecker on the abuse of collyria, and especially on the manner of using them when given to poor patients who had no means of keeping them clean. Dufour believes that De Wecker goes too far in attempting to

banish collyria, especially atropine. Kalt believed that pilocarpine and eserine should not be used in ulcers of the cornea, but where there is iritis atropine should be used. He thinks that the septic condition of the collyria is unimportant, for these are not, in general, more septic than the liquids of the cul-de-sac. The conclusions of Kalt in regard to the uselessness of attempting to obtain aseptic collyria were vigorously disputed by Darier and Chibret. In the discussion the abuse of cocaine and its deleterious effect on the cornea received prominent attention.

#### SOZOIODOL IN DISEASES OF THE EAR AND THE UPPER AIR-PASSAGES.

TEICHMANN (*Therapeutische Monatshefte*, April, 1894) has used in ear-, nose-, and throat-affections various preparations of the salts of sozoiodol,—namely, the sodium, potassium, zinc, and mercury salts,—and speaks of their use with satisfaction. In polyp formation of the tympanic cavity, without caries, sozoiodol of potassium appears to prevent relapses, but in carious processes it does not appear to have a better effect than other medicaments. He has used it still more frequently in nasal difficulties. In eczema of the nasal entrances a one- to two-per-cent. salve of sozoiodol of mercury, with lanolin as the basis, has produced a very good effect. The various forms of rhinitis suggest a large field for the use of sozoiodol preparations, as they do for other medicated powders. For the most part he has used the sozoiodol preparations, especially the potassium salt, in the after-treatment of operations on the nose and throat, and in his practice it has replaced iodoform.

#### THE TREATMENT OF TRAUMATIC CATARACT.

HALTENHOFF (*La Médecine Moderne*, May 9, 1894) has communicated to the French Society of Ophthalmology an article upon this subject, and after referring to Desmarres's rule that traumatic lenticular cataract should, as a rule, not be operated upon, especially when it is evident that absorption little by little diminishes the volume, refers to those cases in which operation becomes necessary in order to hasten recovery. He believes that repeated paracentesis is only a half measure, and that for young patients the standard linear extraction is to be preferred with a wound of from five to seven millimetres. After the thirty-fifth year, simple extraction or the combined section may be

performed. Sometimes it is necessary to use a scoop in delivering the lens; recourse may also be had to aspiration.

If the absorption of the cataract is about to be arrested in consequence of premature occlusion of the capsular wound, there are several methods at our disposal,—namely, repeated paracentesis, daily massage, and if the capsular wound is definitely closed, extraction in an adult, and discission, aspiration, or linear extraction in a youth. In simple or incomplete cataracts, or with partial opacities, we must be guided by the same principles as in the operative treatment of zonular cataract,—that is to say, either iridectomy or sphincterectomy may be performed.

If the traumatic cataract is complicated with glaucomatous symptoms, myotics may be used, together with a paracentesis or sclerotomy. Some recommend linear extraction at once; others are satisfied with iridectomy.

If the cataract is complicated with an infected wound, it may be possible to preserve the eye by immediate antiseptic treatment in children, but usually in laborers, where time is of great moment, enucleation is in order. If the wound has a good chance of healing, it should be sterilized, prolapse of the iris cut off, and, if necessary, the wound sutured or covered with a conjunctival graft. If there is tardy infection of the wound, and local antiseptics, mercurial medication, and subconjunctival injections of sublimate fail, enucleation becomes necessary. Iritis and irido-cyclitis complicating traumatic cataract are treated in the usual way. Foreign bodies in the lens must be dealt with according to their composition and position. If they are of iron or steel, the electro-magnet is occasionally of use; in other instances the whole lens must be extracted within its capsule.

#### THE COMPARATIVE SAFETY OF SUPRAPUBLIC LITHOTOMY, OF LATERAL LITHOTOMY, AND OF LITHOLAPAXY IN YOUNG MALES.

BARLING (*British Medical Journal*, No. 1740, 1894), partly in answer to a paper by Keegan criticising the statistics of English surgeons, advances figures tending to show that litholapaxy is the safest operation for stone. It will be remembered that Keegan reported six hundred and sixty-three cases of litholapaxy performed by eight surgeons in various parts of India, with a mortality of less than three per cent. On the basis of this he holds that it is

incumbent on those who practise suprapubic operation as a routine method in children to show that it is a procedure not more dangerous than lateral lithotomy or litholapaxy.

English statistics are less favorable than those from India, partly because the Indian surgeons have greater experience in this particular class of cases, partly because the natives of India stand operation better than Englishmen.

Barling collected the statistics of twelve English hospitals. Seventy-two cases under twenty years of age were subject to suprapubic lithotomy; 17.4 per cent. of these died. A larger percentage of the cases under ten perished. Fifty-nine cases were treated by lateral lithotomy; two of these died, both under ten years. Fifty-nine cases were subject to litholapaxy; but one of these died. It is worthy of note, however, that litholapaxy could not be completed in two cases, suprapubic lithotomy being required; both these cases perished.

This statistical study shows that the suprapubic operation is by all odds the most dangerous; four of these cases perished from shock, two from infiltration around the bladder, three from various conditions of the kidney, two from peritonitis, and one each from pyæmia, septicæmia, bronchitis, and pneumonia.

The statistics of a single hospital give results pointing in the same direction, but still more conclusive. From 1870 to 1887 seventy cases were treated by lateral operation, with but two deaths. From 1888 to 1893 twenty-two cases were operated on,—fifteen by the lateral and seven by the high operation. All of the lateral operations recovered, while four of the high operations ended fatally.

#### *SURGERY OF THE GALL-BLADDER AND BILE-DUCTS.*

MAYO ROBSON (*British Medical Journal*, April 28, 1894) contributes brief notes of seventy-eight consecutive cases embodying his operative experience of the surgery of the gall-bladder and bile-ducts. Among the prominent symptoms of cholelithiasis he places spasm and biliary colic without jaundice, the attacks being repeated at longer or shorter intervals, coming on without apparent cause, usually starting in the epigastrium or under the right ribs, and radiating to the right scapular region or to the shoulder, and often ending in vomiting, which usually gives relief. Collapse due to the intensity of the pain, which may cause death without any other complication. Spasms, followed by evanescent icterus. Pain, followed by persistent jaundice and enlargement of the

liver, which may give rise to the suspicion of malignant disease, but which may usually be diagnosed from cancer by the presence of attacks of pain, accompanied by a feeling of chilliness or a rigor, and followed by increased temperature and then by profuse perspiration, the whole attack resembling one of ague. Distention of the gall-bladder without jaundice, ordinarily due to impaction of gall-stones in the cystic duct. If accompanied by persistent jaundice, distention of the gall-bladder raises a suspicion of malignant disease, either of the liver or bile-ducts or of the head of the pancreas. Ileus due to atony of the bowel, apparently dependent on the pain producing a profound impression on the nerves of the abdomen, leading to enormous distention and to the symptoms and appearance of acute intestinal obstruction. Acute intestinal obstruction dependent on (a) paralysis of gut due to local peritonitis in the neighborhood of the gall-bladder; (b) volvulus of small intestine; (c) impaction of large gall-stone in some part of the intestine after ulcerating its way from the bile-channels into the bowel. Hemorrhages, the result of long-continued jaundice, either dependent on gall-stones alone or on cholelithiasis associated with malignant disease. Persistent vomiting, with such serious digestive disturbances as to threaten death from exhaustion. Localized peritonitis producing adhesions, which may then become a source of trouble even after the gall-stones have all been got rid of.

The writer believes that nearly every attack of biliary colic is accompanied by adhesive peritonitis, as in his experience in all cases where there have been characteristic seizures adhesions are found. Among the sequelæ of cholelithiasis are dilatations of stomach dependent on adhesions around the pylorus; ulceration of the bile-passages, establishing a fistula between them and the intestine; localized peritoneal abscess; abscess in the abdominal walls; fistula at the umbilicus or elsewhere on the surface of the abdomen; empyema of the gall-bladder; suppurative cholangitis; septicæmia or pyæmia; gangrene of the gall-bladder; perforative peritonitis due to ulceration or to rupture of the gall-bladder or ducts; extravasation of bile into the general peritoneal cavity; pyelitis of the right side; cancer of the gall-bladder or of the ducts; subphrenic abscess; emphysema on the right side; pneumonia of the lower lobe on the right side; chronic invalidism and inability to perform any of the ordinary business or social duties.

Where medical means have failed, surgery holds out very good hope of success in nearly

every complication of cholelithiasis, if the patient be not too much exhausted to permit of any major operation. Cases complicated with malignant disease, however, are decidedly unfavorable ones for operation, because the subjects of cancer are not only, as a rule, cachectic and worn down by disease before the surgeon is called in, and therefore unfitted to bear the shock of any operation, but because such patients are particularly prone to hemorrhage at the time of operation or subsequently; this may be uncontrollable.

In order to avert danger from hemorrhage in jaundiced patients, chloride of calcium should be administered for a few days before operation to make the blood more plastic and to lessen the tendency to bleeding both at the time of operation and subsequently. After operation the drug may be continued for some time either by the mouth or by nutrient enemata with advantage. In jaundiced cases all bleeding points should be ligatured, rather than intrusted to pressure forceps for hæmostasis.

In all cases of malignant disease with jaundice on which the reporter operated the gall-bladder formed a perceptible tumor; whereas, when the jaundice was dependent on gall-stones, there was no marked tumor present. Another diagnostic point worth noting is that in cholelithiasis there is usually tenderness on pressure over some point between the eighth or ninth costal cartilage and the umbilicus. In three cases the pain in the so-called "spasms" was referred to the left side, thence radiating to the left scapular region, and in such cases he found the pylorus adherent to the gall-bladder or cystic duct. So-called diagnostic operations of sounding for gall-stones and aspiration of a distended gall-bladder he believes futile and dangerous and much better replaced by a small exploratory incision, when treatment can at the same time be carried out if required.

After medical treatment has been fairly tried and failed, surgical measures should be resorted to. While cholecystotomy is generally recognized as the operation to be aimed at in the treatment of affections of the gall-bladder or bile-ducts, especially in cholelithiasis, it is often impossible to say what operation will have to be done until the abdomen is opened. The indications for operating are:

In frequently recurring biliary colic without jaundice, with or without enlargement of the gall-bladder.

In enlargement of the gall-bladder without jaundice, even if unaccompanied by great pain.

In persistent jaundice ushered in by pain,

and where recurring pains, with or without ague-like paroxysms, render it probable that the cause is gall-stones in the common duct.

In empyema of the gall-bladder.

In peritonitis, starting in the right hypochondrium.

In abscess around the gall-bladder or bile-ducts, whether in the liver or under or over it.

In some cases where, although the gall-stones may have passed, adhesions remain and prove a source of pain and illness.

In fistula, mucous or biliary.

In certain cases of jaundice, with distended gall-bladder dependent on some obstruction in the common duct; but in such cases the increased risk must be borne in mind, as malignant disease will probably be the cause of the obstruction.

If the case be suitable for cholecystotomy, and the gall-bladder and ducts can be cleared without great difficulty by means of forceps within and the fingers outside the ducts, the opening in the gall-bladder can be sutured to the aponeurosis, which is preferable to skin fixation, and drained.

If the ducts cannot be cleared away, cholelithotripsy or crushing of the gall-stones *in situ* by means of the finger and thumb, or by padded forceps, is indicated, an operation which the writer has successfully performed a number of times. This is greatly to be preferred to incising the ducts or fixing the gall-bladder to the intestine.

Choledochotomy, or incising the duct, whether cystic or common, the incision being afterwards sutured,—not an easy matter on account of the depth of the parts to be coapted,—is best effected by means of a rectangular cleft-palate-needle. A drainage-tube should always be inserted into the right kidney pouch in these cases.

Cholecystenterostomy, or the making of an anastomosis between the gall-bladder and intestine, easily effected if the gall-bladder be dilated, with difficulty performed if the gall-bladder be contracted. Mayo has performed this operation three times, with immediate success and recovery in all, and with complete and permanent relief in two. He prefers the method by means of decalcified bone bobbin, which enables the operator to accomplish the anastomosis rapidly, as only two sutures have to be employed.

The daily injection of fluids after an interval of some days, through the cholecystotomy opening, is recommended; this will either soften or dissolve the concretions. Solutions of hot water, taurocholate of sodium, ether, and ether

and turpentine have been used with more or less success. The suggestion to use an injection of olive oil or a five-per-cent. solution of *sapo animalis* or oleic acid is worth a trial.

Cholecystectomy may be required as a secondary operation in cases of stricture of the cystic duct, the common duct being free. On the three occasions on which Mayo excised the gall-bladder, it was for mucous fistula depending on stricture of the cystic duct following gall-stones, and all the cases were completely and permanently relieved.

Cholecystectomy can seldom be advisable or necessary as a primary operation in gall-stones, and extremely rarely possible in malignant disease. In cholecystotomy, where it is impossible to bring the margins of the incised gall-bladder into the wound, and where the parietal peritoneum cannot be tucked down, to meet the edges of the opening a tube is made of the omentum, but no hesitation need be felt in trusting to a drainage-tube, as the peritoneal cavity soon becomes occluded around the drain, and there is little or no tendency to the passage of bile among the viscera, so that a suprapubic drainage opening is quite unnecessary. A vertical incision along the upper part of the right linea semilunaris gives ample room, as a rule, but, if required, a transverse cut may be used.

Suture of peritoneum, aponeurosis, and skin by separate stitches effectually guards against ventral hernia, if the patient be kept recumbent for from twenty-one to twenty-eight days, and if a firm oval pad be worn under a belt for a few months subsequently.

Strict antiseptic precautions should be observed, the abdomen being left as dry and clean as possible.

The author closes his valuable paper with a warning to operators not to attempt these operations without due skill and experience in abdominal surgery, or after witnessing or helping in several operations of this character, as it is impossible to say beforehand whether the case may not prove exceedingly difficult. He also pleads for early operative interference before the patient's strength is exhausted.

#### TREATMENT OF SYPHILIS BY INJECTIONS OF CALOMEL.

LINDEN (*Archiv f. Dermatologie u. Syphilis*, Bd. xxvii., Heft 2) concludes, as the result of an extended hospital experience, that excision of the primary sore of syphilis has a distinctly favorable influence on the course of the disease. This opinion he bases upon six cases. In three

there followed no further manifestations of syphilis; in one the first sign of the disease was manifest two and a half years after excision; in two there were slight transitory phenomena of the disease. Calomel injections occasion much more marked local reactions than salicylate or thymolate of mercury. Abscesses and extensive infiltrations are frequent. Suppuration was rare in the last series of injections. The effect of calomel injections was more rapid than when the salicylate or thymolate of mercury was used. Mercury is given in larger doses during the first course—i.e., the outbreak of secondaries—than for the treatment of recurrences. In eleven per cent. of the cases treated by calomel injections there were no recurrences. In thirteen per cent. of cases treated by thymolate and salicylate, recurrences did not appear. There are fewer recurrences in the first year when calomel is employed, and the interval between these is longer. When the salicylate is employed, the recurrences are somewhat more frequent in the first year, but are shorter and more amenable to treatment, and they were less commonly observed later on in the case. The author concludes as the result of his investigation that, though calomel acts more rapidly than salicylate and thymolate of mercury, the latter preparations are to be preferred, as occasioning less local reaction and as shortening the course of the disease. The calomel may still be employed when quick action is desired.

#### TREATMENT OF ERYSIPELAS.

FELSENTHAL (*Centralblatt für Chirurgie*, No. 16, 1894) has treated thirty cases of erysipelas by superficial and deep scarification, evacuation of the oedematous liquid by means of direct pressure, and rubbing in with the hand a sixty-per-cent. ichthyol ointment or ichthyol solution. Antiseptic dressing is then placed over this, preferably one of iodoform gauze. The details of these reported cases show results no better than those accomplished by much less severe forms of treatment.

#### GASTROPLICTION.

BRANDT (*Centralblatt für Chirurgie*, No. 16, 1894) applies this name to an operation he has devised for the cure of simple dilatation of the stomach. When this condition has been diagnosed, and when an exploratory laparotomy fails to find cicatricial tumors or any obstruction about the pylorus, the surgeon need no

longer close the belly-wall without the hope of affording any relief, but should instead proceed to reduce the stomach to its normal dimensions by taking in tucks at the expense of the muscular and mucous coats, the freely movable mucous layer being not included in the stitches. Silk and gut are used in applying these stitches, and in one reported case tucks were taken in both the anterior and posterior surface of the stomach. The patient recovered, though as to how much benefit resulted the reporter is silent.

#### INTRODUCTION OF AN ARTIFICIAL TESTICLE.

GUIERAS (*American Medico-Surgical Bulletin*, May, 1894) proposes an ingenious operation for the introduction of an artificial testicle. Though not increasing function, this is apparently destined to become highly popular from a cosmetic stand-point. A patient, thirty-two years of age, came to him complaining of the absence of the left testicle and a recurrent right inguinal hernia. The latter was cured by Bassini's operation, after which, at the patient's request and because the absence of the testicle was in fact his main complaint, a mass of celluloid, resembling in size and shape the normal testicle, was inserted into the tunica vaginalis of the left side. The wound required by this operation healed by first intention. The results were apparently entirely satisfactory to all concerned.

#### PAGET'S DISEASE OF THE NOSE.

RAVOGLI (*Journal of Cutaneous and Genito-Urinary Diseases*, vol. xii., No. 140) reports a case of Paget's disease affecting the nose. The diagnosis was based on the presence of large oval shells of a double contour, showing a double margin, filled with abundant protoplasm, which has a strong chromatophoric power. The author concludes that Paget's disease is not limited to the breast of the woman, but can also affect other parts; that the factor of this disease is the presence of certain organisms,—coccidia. It is not an epithelioma, but with time may degenerate into epithelioma.

#### TREATMENT OF PHAGEDENIC CHANCROID.

In response to a letter of inquiry sent out by the *Journal de Médecine de Bordeaux*, No. 8, 1894, concerning the treatment of phagedenic chancroid, ARNOZAN replied that hot local baths sufficiently prolonged gave him excellent

results. This opinion he bases not only on practical experience, but on the researches of Auber, who showed that the pus of chancroid lost its virulence if exposed to a temperature of 39° C., or even of 38° C. if long continued. The baths are thus administered: the region involved should be bathed four to six times a day, according to the gravity of the case, and in water raised to 40° C. The application of this hot water is continued for ten minutes. The hot solution may be either water or 1 to 1000 carbolic or 1 to 10,000 sublimate solution; heat is the important principle. Iodoform is applied in the intervals between the baths. After the granulations have become healthy and the ulcers cease to spread, hot baths should be discontinued.

DUBOURG treats the phagedenic chancroid by cleansing with a 1 to 2000 solution of sublimate. The point of the thermo-cautery is then applied to the entire diseased surface, the statement being made that if the patient is pusillanimous, chloroform may be employed; if not, a .5 per cent. solution of cocaine locally. At times the hot iron is replaced by a solution of chloride of zinc, ten per cent. In whatever way the chancroid has been caused, it is again thoroughly washed with a sublimate solution, dried, and powdered with salol or iodoform. The dressing is completed by pledgets of cotton soaked in a bichloride solution and frequently renewed.

#### ointment FOR THE SKIN-PIGMENTATIONS INCIDENT TO PREGNANCY.

R Oxide of zinc, gr. v;  
Yellow oxide of mercury, gr. xx;  
Castor oil,  
Coca butter, of each, 3iiss;  
Essence of roses, gtt. x.

Apply twice daily; rub into the skin surfaces which show pigmentation.

—*Revue Médico-Chirurgicale de Mal. de Femme*, February 25, 1894; from *L'Union Médicale*.

#### FISSURES OF THE NIPPLE.

R Aristol, ʒiiss;  
Liquid vaseline, ʒi.

This ointment should be applied after each nursing.

—*Revue Médico-Chirurgicale de Mal. de Femme*, February 25, 1894; from *Lyon Médical*.

#### VENTRO-FIXATION OF THE UTERUS.

After reporting some cases of ventro-fixation, SINCLAIR (*Medical Chronicle*, April, 1894) con-

cludes a thorough paper upon this subject as follows:

1. The various published series of cases show that the element of danger is almost *nil*. The present writer's series supports this opinion.

2. The operation, efficiently performed, is a permanent cure of the troubles arising from chronic retroflexion of the uterus, complicated with adhesions or inflammatory affections of the tubes and ovaries.

3. When pregnancy occurs after the operation no distress is experienced by the patient, and no unusual phenomena are observable during pregnancy, parturition, or the puerperal state.

4. Contrary to what might be expected, bladder-troubles are quite the exception after the operation, and these discomforts are almost certainly avoidable by care in operating.

5. In a certain proportion of the cases ventral hernia occurs at the site of the cicatrix. How this is to be prevented is one of the problems of the future.

6. After making full allowance for the element of risk and the incidental drawbacks, the operation of ventro-fixation is not only justifiable, but is indicated in a certain limited class of cases of retroflexion of the uterus with complications.

#### CANCER OF THE RECTUM.

JONES (*Medical Chronicle*, April, 1894), after a careful review of the diagnosis of cancers of the rectum, states that operations have for their aim either the relief of urgent symptoms or radical cure by complete removal of the diseased mass. As a relief measure colotomy affords the best prospect, not only lessening pain, but also checking the progress of the disease and placing the patient in a state of comparative comfort. This operation should be practised before the disease has made serious inroads upon the patient's strength. Linear proctotomy and free scooping away of the diseased mass are methods which have little to recommend them. Removal of the cancerous growth by free use of a scoop or the fingers should perhaps be adopted when other means are unavailable. From recorded cases it appears that, when the diseased masses are thoroughly broken up and taken away, the loss of blood is not conspicuous. In some cases partial cicatrization has taken place. Before operating for radical cure an examination under ether should be made to determine the extent of the disease and the state of the rectum in regard to mobility in the pelvic space. We must also have regard to the general condition of the

patient with respect to strength and nutrition, age must be taken into account, and especially the presence of infiltration of the peri-rectal tissues. Secondary deposits in the liver or elsewhere must be searched for. The immediate risk of the operation is not great. Czerny operated in twenty-five cases with only one death. Causes of death in the majority of cases have probably been cellulitis and peritonitis.

Kraske's method—*i.e.*, removal of the coccyx and the left lower part of the sacrum for the obtaining of sufficient room—is to be commended, the healthy bowel being brought down and fixed in its entire circumference to the skin. The condition of the patient following this operation compares very favorably with that obtained by colotomy. In most instances the patient recovers sufficiently to enjoy life and even to resume active work, and it is possible that the disease may not show itself locally, but return in some internal part where its ravages are less dreadful to witness.

In Cripps's cases nine out of twenty-three recurred after periods varying from four months to two years. These remained well for intervals which varied from two to four years. It is well known that cancer of the rectum remains confined to the gut for a long time, and if the case is taken in hand sufficiently early the chances for successful extirpation are encouraging. Once the disease has travelled beyond the gut, the chances for doing good by removal are of the remotest kind.

#### ORCHITIS COMPLICATING MUMPS.

CATRIN (*Revue de Thérapeutique Médico-Chirurgicale*, March 15, 1894), having had occasion to observe an epidemic of mumps, treated one hundred and fifty-nine of these cases for orchitis. He found that this complication developed from the fourth to the eighth day of the disease, only exceptionally preceding the swelling of the parotid. The orchitis was accompanied by fever, which lasted for three or four days. It usually began in the epididymis, sometimes being limited entirely to this body.

It was best prevented by rest in bed from the beginning of the attack. Atrophy occurs more frequently than is generally believed. Sometimes after a period of wasting the testicle again recovered its normal volume. When the disease developed on both sides, and the testicles atrophied, it was found that the spermatozoa became lessened in number, but did not disappear.



**ASEPTIC DRESSING FOR THE UMBILICAL STUMP.**

ALLEN (*American Journal of Obstetrics*, April, 1894) divides the cord about two and a half inches from the abdomen. After the child is washed, the cord and the abdomen are wiped off with 1 to 1000 bichloride solution; the cord is cut about one and a half inches long and stripped out. The bichloride solution is used freely, a sterile elastic ligature is placed around the cord, and its cut end is touched with a bichloride tablet. A piece of sterile gauze four inches square is prepared by cutting a hole in its centre and saturating it with pure glycerin. In this the stump of the cord is entirely enveloped. It is then turned up on the abdomen, another pad of gauze soaked in glycerin placed over it, and the whole held in place by a sterilized flannel bandage. Cords thus treated fall off in three days. Until this occurs the bandage is opened twice daily and the cord wrapping is saturated with glycerin, the top pad being replaced with a fresh piece of gauze. After the cord falls the umbilical fossa must be filled with aristol, a dry pad of gauze placed over it, and the bandage reapplied. Of course the surgeon should prepare his hands as for a formal operation.

**GASTRO-HYSTEROPEXY AS A SAFE AND RELIABLE MEANS OF CORRECTING PROLAPSUS AND RETRO-PLACEMENTS OF THE UTERUS.**

BOND (*Journal of the American Medical Association*, June 2, 1894) calls attention to the fact that by far the most frequent displacements to which the uterus is liable are the downward and backward,—namely, the various degrees of prolapsus, retroversion, and retroflexion. But few, if any, troubles in the entire field of gynecology impose more of suffering and misery than is entailed by the inflammatory consequences of these affections. The reflex disturbances and the general ill health that usually follow often lead to melancholia, hysteria, and even more pronounced insanity. In many instances the health is wrecked, and the functions of the various systems of the body are so perverted as to lead to a condition of general impairment of nutrition which predisposes to the activity of any inherited tendency to disease.

After discussing the etiology and diagnosis of these conditions, Bond advises the following treatment:

The pessary finds its useful application in

those cases of retroversion and retroflexion in which the uterus is not bound down by peritoneal adhesions, in which the ovaries are not prolapsed and—as is often the case—incarcerated in the cul-de-sac of Douglas, and in those cases in which the displacement has not lasted so long that the round ligaments and other supports have lost all power of regaining their resiliency. In such cases, having first relieved complicating conditions, such as laceration of the cervix and tears of the perineum, we can, by the patient and judicious use of the intravaginal or Smith-Hodge pessary, accomplish much for the relief of our patients; and, recognizing the fact that the displacements usually manifest themselves after parturition, it becomes the imperative duty of the obstetrician to make a careful physical exploration of the pelvic organs within eight or ten weeks after accouchement, with the view to correct any altered position of the uterus. At that period usually the displacement has not produced inflammatory results which would negative the use of the pessary, since such cases generally remain uncomplicated for a variable period of time, often months, save possibly by the results of subinvolution.

The conditions and results of treatment are far different when the displaced organ or associated pathologic state has produced pelvic peritonitis, the adhesive products of which have fastened the uterus, and possibly the ovaries, in varying relations to each other in the cul-de-sac of Douglas, with possibly suppurative results; so also are they different when the suspensory supports, from long-continued traction, have become so attenuated as to be practically paralyzed.

Prolapsus in the first degree can usually be corrected by the use of the pessary, after complicating conditions have been relieved, such as hypertrophy, elongation or lacerations of the cervix, or tears of the pelvic floor; but let the case become once well established, as is represented in the remaining degrees of prolapsus, and we have a condition of things represented by stretched and paralyzed suspensory supports; the cellular tissue is without elasticity; the muscles of the pelvic floor, if not torn, are atrophied and often have undergone fatty degeneration. Under such conditions it is idle to expect anything like complete and satisfactory results from the methods of treatment usually pursued.

In the case of the adherent retroposed uterus pessaries are inapplicable, and forcible breaking up of the adhesions after the method of Schultz, through the uterine cavity, is danger-

ous and often ineffectual. In short, all attempts to interfere with a uterus which is bound down by adhesions, other than through intra-abdominal procedure, are dangerous and to be condemned, for the reason that absolutely accurate knowledge of the pathologic conditions cannot always be ascertained, and in this way we may unconsciously compromise the life of a patient by causing the contents of a pus-sac to be liberated into the peritoneal cavity; and, further, it is a blind procedure, lacking all the elements of precision necessary to reliable and good ends. Here it is that a method of treatment presents itself which is both safe and efficient. This is hysteropexy. Many methods of conducting hysteropexy have been devised. Through it, in a sure and reliable manner, we place the uterus so that its posterior surface is opposed to intra-abdominal pressure, which, as previously stated, acts from above and behind in such a manner as to assist in maintaining the proper position of the uterus. We thus supply the key-stone to the arch of uterine retention, without which in no uniformly reliable manner can the damaged pillars of support be made adequate to their requirements. It is remarkable how little force is necessary to keep the uterus antiposed when anchored ever so slenderly in its proper place.

The general precautions pertaining to a coeliotomy having been observed, the opening through the abdominal wall is made as low down as practicable, and no larger than necessary to admit of efficient and expeditious work. The patient is placed in Trendelenburg's position, by means of which the pelvis is freed from the confusing presence of intestines and omentum, and they are spared the injury of unnecessary manipulation. The walls of the incision are held outward and apart, to admit of as free inspection of the pelvic organs as possible. By means of inspection and the sense of touch, accurate knowledge of the conditions and relations of the pelvic structures is obtained. If adhesions exist, they are broken up by means of the index and middle fingers; the ovaries and Fallopian tubes are brought up to the abdominal opening and carefully inspected, and if found to be seriously diseased they are removed, otherwise not. Small ovarian cysts are treated by clipping off a portion of the cyst-wall. The fact that the organs are found adherent is not in itself sufficient justification for their removal. Next, the uterus, having been lifted to the front, is seized through its fundus with a double tenaculum and held by an assistant in such relation to the abdominal wound that the operator can readily pass a

curved needle threaded with a heavy chromicized catgut suture through all the tissues of the abdominal wall except the skin, embracing sufficient of them to secure a firm hold, then through the anterior and upper portions of the fundus and out similarly through the abdominal wall at the opposite side of the incision. The tenaculum is now removed and the assistant takes the catgut suture in its stead. The abdominal wound is then closed by interrupted sutures in the usual manner, with this difference, that the catgut suture that has transfixed the uterus is tied before, but not until the abdominal suture in closest relation to it has been drawn upon, so as to approximate the peritoneal surfaces. The tying of this last abdominal suture draws the skin over the catgut suture and thus buries it. This has been the author's method of operation, and the results have been uniformly good.

#### SUTURE OF THE MEDIAN NERVE.

CAILLET (*Gazette Médicale de Paris*, May 26, 1894) presented before the Surgical Society a patient who had received a wound of the anterior surface of the forearm dividing the muscles, tendons, and the median nerve. Five days later the tendons and nerve were sutured. At the time of suture there was complete anæsthesia of the entire area supplied by this nerve. Three days after operation sensibility returned in the palm of the hand; in nine days sensation was restored to the index and middle fingers, with the exception of the terminal extremities. At the time of reporting there was still slight dyæsthesia of the terminal extremities of the index. The functions of the hand were entirely restored, and, with the exception of slight wasting of the thenar eminence, there were no trophic changes.

#### ANTISEPTIC VALUE OF TRIKRESOL.

REED (*St. Louis Medical and Surgical Journal*, June, 1894) states, as a result of his laboratory experiments for the purpose of testing the antiseptic value of trikresol, that this agent in one-per-cent. solution kills pus-germs within thirty seconds; one-third per cent. does not kill in two hours' exposure. One advantage of this agent is that the presence of albumin in the fluids to be disinfected does not interfere to a marked extent with its germicidal action, though Reed's experiments showed that when blood-serum is used as a culture agent a minute and a half is required to kill the staphylococci and streptococci. The poisonous qualities of

the drug are about the same as carbolic acid, but it must be borne in mind, in comparing a carbolic acid and trikresol solution, that a one-per-cent. solution of the latter accomplishes as much as four- or five-per-cent. solutions of carbolic acid, hence the danger of poisoning is necessarily reduced four- or fivefold.

It possesses marked germicidal powers, both in watery and albuminous fluids, and does not numb or irritate the fingers.

#### *TREATMENT OF CICATRICAL STENOSIS OF THE ŒSOPHAGUS.*

TIETZE (*Deut. Med. Woch.*, 1894, No. 1617, quoted by *British Medical Journal*, No. 1743, 1894) concludes, as the result of his studies of this subject, that gastrostomy should be done in severe cases more often than it has been in the past, that continuous dilatation with the drainage-tube is more rapid and less dangerous than with bougies, and that combined gastrostomy and œsophagotomy may lead to success in some cases.

#### *INTESTINAL APPROXIMATION.*

MURPHY (*Medical Record*, June 2, 1894), after a careful study of this subject, quotes one hundred and thirty-four intestinal approximations by all methods reported in the last six years. Of these, forty-nine were end-to-end, sixty-one side-to-side, and in twenty-four the position of approximation was not stated. There were forty-four cases of approximation for acute obstruction, with twenty-nine recoveries and fifteen deaths, a mortality of 34.1 per cent. For chronic obstruction, forty-three cases, with thirty-one recoveries and twelve deaths, a mortality of 27.9 per cent., making a total for obstruction of eighty-seven cases, sixty recoveries and twenty-seven deaths; mortality, thirty-one per cent. The methods employed in acute obstruction were: suture, twenty-eight; recoveries, eighteen; deaths, ten; mortality, 35.6 per cent. Mechanical means, thirteen; recoveries, ten; deaths, three; mortality, 23.1 per cent. Suture, with mechanical aid, three cases, with one recovery and two deaths; mortality, 66.7 per cent. Methods employed in chronic obstruction were: suture, twenty-eight cases; nineteen recoveries, nine deaths; mortality, 32.1 per cent. Mechanical means, thirteen cases; eleven recoveries, two deaths; mortality, 15.4 per cent. Murphy button, twenty cases; nineteen recoveries. Suture, with mechanical aid, two cases; one recovery, one death; mortality, fifty per cent. Total number of intestinal approximations for closure of arti-

ficial anus, thirty-five; twenty-eight recoveries, six deaths, one unknown; mortality, 17.1 per cent. Of these, twenty-four were suture, with eighteen recoveries, five deaths, one unknown; mortality, 20.1 per cent.; seven were by mechanical means, seven recoveries; four were by suture with mechanical aid, three recoveries, one death; mortality, twenty-five per cent.

The author finally concludes that the more rapidly the operation is performed the less the danger from shock.

The less the manipulation and exposure of the intestine the less the danger of infection, post-operative paralysis, and adhesions.

The more uniform and continuous the pressure at approximation the greater the assurance of adhesion and the less the liability of infiltration.

A line of approximation is as good as half an inch.

Mechanical means in the last five years have produced better results than the suture in both lateral and end-to-end approximation.

The mortality in end-to-end approximation is much less than in lateral apposition, and should always be given the preference.

The more perfect the juxtaposition of the various layers the less the interposition of fibrous tissue and the more complete the regeneration across the line of union.

The juxtaposition of the similar histological layers of the wall of the intestine is an assurance against cicatricial contraction.

The more extensive the approximation surface, the larger the fibrous deposit, the greater the contraction.

The contraction with end-to-end is less than with lateral approximation.

#### *AMBULATORY DRESSINGS IN FRACTURES.*

BARDELEBEN (*Medical Press and Circular*, May 23, 1894) reported to the German Surgical Congress one hundred and sixteen fractures of the lower extremities successfully treated with walking dressings or splints. Eighty-nine were of the leg, twelve compound; twenty-two of the thigh, five compound. The patient was able to get out of bed and go about on his broken limb in a few days. He could devote himself to his business and his family, and was saved the muscular atrophy of decubitus. His appetite, digestion, and sleep were those of a healthy individual. The ambulant treatment is of special importance in the case of the aged and of drinkers. The fractured bones heal more rapidly than if kept at rest. In fracture of the thigh the chief support must be

tuber ischii, in the lower leg the condyles of the tibia. Great care is required. If there is marked swelling, it is better to wait three or four days; but when the dressings were applied earlier, no harm resulted. If much swelling is present, however, the dressings generally have to be reapplied. A gelatin plaster-of-Paris bandage was used, with iron bands to give the required firmness. A morphine injection is desirable before applying the dressing, but no anæsthetic. The first attempts at walking should be made with a go-cart, on the principle of that used in teaching a child to walk. All the cases began to walk the day after the leg was put up, and they persevered until they could walk with crutch and stick, and later on with a stick only. A single putting up is generally sufficient.

#### TREATMENT OF PERSISTENT URETHRAL DISCHARGE.

FULLER (*Journal of Cutaneous and Genito-Urinary Diseases*, vol. xii., No. 141), after alluding to the cases of gleet which no treatment benefits, states that he has cured a certain number of these cases by regularly milking the seminal vesicles. During the active stage of treatment patient should be seen once in every five to seven days; this active stage lasts from one to nine months. When there is marked inflammatory reaction, treatment may be frequently suspended from three to six weeks. Stripping is done with the forefinger in the rectum, and to carry this in to a sufficient depth considerable perineal pressure is frequently required. In applying this treatment the patient stands with his body bent forward; then the foot of the operator corresponding to the hand to be aided is placed in a chair, thus bringing the knee up to the level of the elbow. By this arrangement the muscles of the thigh and leg, as well as of the arm and shoulder, all working together, can furnish pressure sufficient to overcome the resistance of the most rigid perineum. It is only occasionally that such extensive muscular efforts are called for. In weak, loose-fibred individuals, little or no pressure is required to reach the vesicles. Indeed, a counter-abdominal pressure can easily engage the tip of the forefinger in the sigmoid flexure.

#### TREATMENT OF STRICTURE OF THE OESOPHAGUS.

MAYO (*Northwestern Lancet*, April 15, 1894) reports two cases of stricture of the oesophagus. The first, a child three years old, burned by lye one year before, was treated by bougies.

These, though they did not pass through the stricture, seemed to give temporary relief. Later, narrowing became almost absolute; gastrotomy and retrograde dilatation were practised. These, when supplemented by an œsophagotomy, rendered the passage of a silk thread from the stomach to the neck wound possible; this was used to saw through the stricture. Dilatation was accomplished by knots placed in the second thread and brought through the narrowing. For a month this process of division was carried on every four days, and perforated shot were clamped upon the threads and brought through. At the end of this time bougies could be passed first to the neck and then through the mouth. The child's convalescence from this time was practically uneventful.

A second child, aged four, swallowed lye a year before coming under observation. Only after prolonged effort could a filiform bougie be passed through the lower and deeper of the two strictures. At the end of a year a fair amount of dilatation was accomplished; but no further progress being possible by this method, œsophagotomy was performed. The upper stricture was readily dilated by forceps; the lower stricture was carefully nicked with a dull knife on a grooved director and dilated with forceps, permitting of easy catheterization of the œsophagus.

#### TREATMENT OF FACIAL ERYSIPELAS.

WHALEN (*Journal of the American Medical Association*, April 29, 1894) treated some cases of facial erysipelas with guaiacol, and reports satisfactory results. He especially calls attention to the short time that elapsed in his reported cases between the application of the drug and the resulting relief. Repeated trials on the fourth case showed that a chill could be aborted by the external application of guaiacol. Except in cases of extreme irritability of the skin, the application of pure guaiacol does not cause pain. In such cases the guaiacol may be diluted with alcohol, olive oil, or any of the fixed oils to the desired strength. The amount of guaiacol employed varied from 20 to 30 minims. In two cases the application of the remedy was followed by subnormal temperature. He considered that convalescence was hastened in cases in which he used the drug, and that this is the most efficient therapeutic agent that we possess at the present time. The author ordered the drug painted over the affected areas, and noted in all cases immediate

relief of distressing symptoms, though the eruption itself did not seem to be materially influenced.

#### TENORRHAPHY BY MEANS OF WIDE CATGUT SUTURES.

EMANUEL J. SENN (*Journal of the American Medical Association*, vol. xxii., No. 17) reports a case of tendon suture, interesting because the divided tendons could not be closely approximated, but were made continuous by the insertion of a number of catgut sutures. In this operation the original method of Gluck was followed. This author held that the catgut, properly applied, prevents the tendon ends from retracting, forms a passage-way for tissue proliferation, establishes a barrier by which the embryonal cells secure protection from atrophy caused by pressure of surrounding parts, and acts as a foreign body, stimulating the matured cells. The patient reported suffered from extensive lacerated wound on the back of the forearm. This was closed and healed, but left the fingers supplied by the extensor communis digitorum absolutely useless so far as extension was concerned. Three months later an attempt was made at restoration. On opening the old scar the proximal end of the common extensor tendon was found. This, properly speaking, was not a tendon, but simply the end of the muscle. After tedious dissection, the four distal extremities—i.e., the three tendons of the extensor communis digitorum and the extensor indicis—were discovered some four inches lower down the arm. Splicing by splitting was not to be thought of; therefore medium-sized catgut was employed, eight sutures connecting the tendons and the muscle. No drainage was applied; the external wound was closed with an interrupted row of silk-worm sutures and a continued row of catgut. Hæmorrhage had been well effected by ligature and hot-water irrigation. The hand was dressed in an extended position upon an anterior splint. The dressing was removed upon the fourth day, and the wound presented a favorable appearance, except for a small suppurating focus around one stitch. The twelfth day the patient could extend three fingers upon the splint with slight effort. At the end of a month he had complete restoration of function.

#### TREATMENT OF COMPOUND FRACTURES.

CRILE (*Medical Record*, February 10, 1894) holds that, no matter how extensively bone is injured, in the absence of other complications

this constitutes no ground for amputation. The fragments should be thoroughly reduced and, if necessary, held in place by strong silk ligatures, which may be fixed in the grooves, may be a saw, may be cut off close and allowed to remain buried in the wound. The fracture should be treated the same as simple fracture, but in case of infection provide for ample dependent drainage. In case of doubt, treat the case as if it were known to be infected. Restore the normal relations of the soft parts, if necessary, by means of buried sutures. If there are ragged edges, the wound should be revised by trimming off the crushed tissues, and if the opening in the skin be soiled, continuous excision of the margin should be practised. If necrosis of the bone follow, maintain free drainage and wait for a complete separation. Unless under continuous observation, plaster-of-Paris bandage should not be applied until the acute symptoms have subsided and the condition of the wound has declared itself. In restoring the normal function, persistent treatment by massage, baths, tonics, and, possibly, electricity, are important. The bone should be treated as if there was no injury to the soft parts; the soft parts as if there was no injury to the bone.

#### SUCCESSFUL REIMPLANTATION OF URETER INTO THE BLADDER.

MAYO (*Medical Record*, February 10, 1894) reports the successful reimplantation of ureter into the bladder for the relief of utero-vaginal fistula, the result of vaginal hysterectomy. The first effort at restoration was unsuccessful, but later the urine in the bladder and that escaping from the wounded ureter was drained off by a rubber tube, and about this was formed a channel, resulting in complete closure of the fistula in two weeks.

#### RECTAL INCONTINENCE AND ITS CURE BY TORSION.

GERSTER (*Medical Record*, vol. xlv., No. 6), basing his procedure on the ingenious method of Gersuny as applied to the incontinence of urine in women, successfully operated on a boy for incontinence of fæces. It will be remembered that Gersuny, for the cure of vesical incontinence in women, dissected out the entire female urethra, rotated it around its own axis, and secured it to this position by pressure of the outer skin. This resulted in perfect continence. Gerster thus treated the patient brought to him. The latter was a boy seven years of age, with prolapse of the rectum and inconti-

nence of fæces, due to congenital defect of the sphincter. He was born with an imperforate anus, for which proctoplasty had been performed shortly after his birth. The child was anæsthetized, and two and a half inches of the lowermost portion of the rectum, including all of its coats, were freely dissected out. The free margins of the gut were secured at the four quadrants of its circumference by four artery clamps, and then twisted in an arc of three hundred and sixty degrees, and secured to the outer skin by a dozen silk sutures. Both prolapse and incontinence were cured.

#### THE OPEN INCISION IN UNCOMPLICATED CASES OF HYDROCELE.

CLENDENIN (*Boston Medical and Surgical Journal*, vol. cxxx., No. 18), basing his opinion on the experience of two cases, holds that open incision is the only operation for simple hydrocele of any size, and that by the aid of cocaine anæsthesia this procedure may be made comparatively painless. It is worthy of note that both the author's cases recovered in a comparatively short space of time. After calling attention to this, Clendenin characterizes the practice of paracentesis and injection of an irritating fluid as unsurgical, basing this opinion upon an experience of one case. This case disappeared immediately after operation. Contrary opinions expressed by Agnew and Wyeth are mentioned with due tolerance.

#### AFTER-TREATMENT OF OPERATIONS FOR APPENDICITIS.

BURRELL (*Boston Medical and Surgical Journal*, May 3, 1894) secures the stump of the appendix where there is but little pus. When suppuration is free he employs catgut. He eschews drainage and prefers three rows of abdominal stitches,—one in the peritoneum, one in the transversalis fascia and muscles, and the third in the skin. He employs silk for the simple sutures.

His treatment for shock consists in the use of alcoholic stimulants, brandy, whiskey, heaters, and rectal enemata of brandy, atropine, strychnine, and digitalin. He administers cracked ice, beef-tea, and a little milk for the first twenty-four to forty-eight hours. Opiates are used freely, as he believes the patient loses more from pain than he gains by the free action of the intestines from saline cathartics. He claims to have lost one patient through the injudicious use of salines. He controls vomiting by cracked ice and morphine, soda and cham-

pagne. In one instance washing out the stomach at the end of three days caused vomiting to cease. Where this distressing symptom continues beyond the third or fourth day, the author usually regards the case as hopeless. Salines are indicated when, after the first forty-eight hours, there is any increase in the frequency of the pulse or glazing of the tongue. Where there has been vomiting, saturated solution of salts may be given by enema, though the same result may be attained by glycerin suppository. No reason is seen why opium and saline cathartics should not be given at the same time. Sterile water or boracic-acid solution are employed for flushing out the cavity of the appendicitis operation. The wound is always closed without drainage when there is no pus, or even if there is a slight amount of pus, if this can be cleansed away it is safe to close. Rubber tubes are employed when there is a large pus-cavity with walls which do not collapse; rubber dam or iodoform gauze are indicated where the cavity is collapsible. Iodoform gauze should always be employed for drainage when, appearing within forty-eight hours of the beginning attack, a perforating appendix is found, especially when it is a question whether the general peritoneal cavity is infected. There seems to be a feeling on the author's part that the appendix should always be removed. Reopening of the wound or thorough exploration of it is strongly advocated in the event of long-continued profuse discharge, progressive rise of temperature after the fifth day, or chill owing to failure of drainage. In three instances where the author had been compelled to reopen wounds between the tenth and twelfth days after the temperature had been normal, this interference being required on account of sudden and continued rise of temperature and chills, there escaped, on separating the coils of intestine, a large quantity of offensive gas, but no pus. In each instance the wounds were repacked, the temperature fell to normal in a short time, and convalescence was established.

#### METHODS OF DRAINAGE, WITH SOME REMARKS ON A NEW ASEPTIC DRAINAGE-TUBE.

HYDE (*Brooklyn Medical Journal*, May, 1894) calls attention to the fact that ever since drainage of the abdominal cavity was first proposed as a safeguard against septic troubles or hemorrhage, there has been constant experimenting to find the best means to accomplish this result, and many ingenious devices have been submitted to the profession for approval.

With the exception of Mikulicz's method of drainage by iodoform or sublimate gauze, which method is still in vogue to some extent, all others seem to have been abandoned practically for the glass tube. This is probably because it is one single glass piece, perfectly smooth, and the most easily rendered aseptic.

Any method by which the fluids likely to be found in the abdominal cavity after operation can be brought to the surface is drainage, and good as far as it goes, but all are found to be faulty in one respect or another.

A strip of gauze may not irritate the peritoneal coat, but one cannot be assured that it remains *in situ* fifteen minutes after the wound is closed: it may be anywhere except where needed,—in the bottom of the wound. Rubber tubing or any soft, flexible material is no better; nor are the drainage-tubes made from animal tissues, which soften down, collapse, or are absorbed, any better.

For this reason the drainage-tube must be of some firm material,—hard rubber, aluminum, or glass,—of such make and shape that no doubt can be entertained as to its position in the wound, and the general consensus of surgical opinion is that glass is preferable.

In conclusion, the writer introduces a new drainage-tube, devised and perfected by himself. Iodoform or sublimate absorbents can be freely used with it, yet never come in contact with any of the abdominal tissues to produce irritant or toxic effects. It seems to possess a higher absorbent power of fluids than other means of drainage known, and its presence in the wound and abdomen seems to be less harmful. This drainage-tube consists of a double glass canula, curved to fit the wound and the locality of the operation. It has four eyelet-holes on either side for any pus or exudate to enter. It has a continuous and uniform calibre throughout its course, through which the sterilized and absorbent wicking is drawn, several inches at necessary intervals, thus pumping out all deleterious matter and keeping the wound dry and clean.

The wicking is boiled for two hours in water, then dried and placed in ether. It is then put in a hot biniodide solution, or it may be sterilized, after boiling in water, by an ether and iodoform mixture. It is then dried between layers of aseptic cheese-cloth and wound on spools, which are also equally protected. The spools are placed in aseptic boxes, with a rubber tube attachment to each, through which the aseptic wicking is conveyed to the drainage-tube. This connecting tube is about fifteen inches long, to allow the spool to lie by the

side of the patient in bed. A double fold of iodoform gauze can be used in place of a rubber tubing to protect the wicking. It is necessary to have a few extra spools of wicking prepared for emergencies, and the canula can always be easily threaded by first tying a shot to a piece of stout silk and passing this through the canula, and afterwards attaching the silk to the wicking. Finally,—

1. It is narrower than the usual drainage-tube, and it conforms to the line of incision.
2. It is impossible for the tissues to clog the openings and thus defeat its intended purpose.
3. It forms a complete pump, which removes all pus, blood, or serum.
4. It is absolutely aseptic.
5. It can be safely intrusted to any intelligent nurse without danger to the patient.
6. The surgeon can always know what is going on at the bottom of the wound.
7. It is very light and strong.
8. There is no danger of fæcal fistula resulting from its use.

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## Reviews.

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ESSENTIALS OF NERVOUS DISEASES: A MANUAL FOR STUDENTS AND PRACTITIONERS. By John C. Shaw, M.D. Second edition, revised.  
Philadelphia: W. B. Saunders, 1894.

When the first edition of this little book upon nervous diseases was published, we took pleasure in commending it, for it is a good compilation of the subject of which it treats, provided that the purchaser desires a book which of necessity is so condensed that it but gives him the outline of the subject. The second edition differs in no way from the first, and very little new material has been added to it. The book is one of the best of the series of which it is a member.

ESSENTIALS OF ANATOMY, ARRANGED IN THE FORM OF QUESTIONS AND ANSWERS. By Charles B. Nancrede, M.D. Fifth edition.  
Philadelphia: W. B. Saunders, 1894.

We are told in the preface of the fourth edition that since 1888 fifteen thousand copies of this useful little manual have been purchased by students and others, and we see no reason why its popularity should not continue. While too brief to form a dissecting manual and far too brief to act as a text-book of anatomy, it is useful to the student who desires from week to

week to go over the more salient points about which the more minute points must be clustered. The frequent editions have eradicated errors and enabled the author or his assistants to keep the book up to the mark.

URIC ACID AS A FACTOR IN THE CAUSATION OF DISEASE. By Alexander Haig, M.A., M.D., F.R.C.P. Second edition.

London: J. & A. Churchill, 1894.

Those readers of the THERAPEUTIC GAZETTE who have been subscribers for more than a year or two may perhaps remember the laudatory review which we took pleasure in publishing of the first edition of this very notable contribution to modern pathology and medicine. In that review we took pains to set forth some of the opinions and views of Dr. Haig. The present volume is not only a reprint of the earlier edition, but has been benefited by the incorporation of the results of the author's many additional studies, and should be in the hands of every practitioner of medicine; for although it is probable that we may have to modify some of the views expressed by Dr. Haig, he occupies the position of being a pioneer in this interesting subject, and his careful and conscientious work entitles whatever he may contribute to literature to careful study.

AN INTERNATIONAL SYSTEM OF ELECTRO-THERAPEUTICS: FOR STUDENTS, GENERAL PRACTITIONERS, AND SPECIALISTS. By Horatio R. Bigelow, M.D., and thirty-eight associate editors. Thoroughly illustrated. In one large royal octavo volume.

Philadelphia: The F. A. Davis Company, 1894.

This system, published in one volume and edited by Dr. Bigelow, deserves a large amount of success. The articles which it contains not only deal with the medical aspects of electricity as we recognize them to-day, but also present a large number of scientific facts in regard to which the general physician should be informed, including certain historical views which are of value to the worker in modern medicine. A valuable chapter is the opening one by Professor Duff upon electro-physics, in which, in the space of three hundred and eight pages, he gives about as complete a *résumé* of electricity, medical and otherwise, as can be found in any single book. Another interesting chapter is that by Wesley Mills, of Montreal, upon animal electricity, and still another that by Dr. A. P. Brubaker upon electro-physiology. The important subject of electro-diagnosis is treated by Dr. W. F. Robinson, of Albany; and, as might be expected, the influence of

electricity upon diseases of the uterus is discussed by Dr. Massey. It is impossible to go over each individual article and analyze it. Suffice it to say that the volume presents the subject of electricity in medicine in the favorable light which medical electricians are so fond of throwing upon it. Even if some of us are unable to believe that such extraordinarily good results follow the application of electricity to all conditions, every one recognizes the extraordinary value of this remedial agent when properly applied, and all of us should know when and how to apply it. This book presents the information in such a form that no one can have an excuse for pleading ignorance concerning the use of electricity in the treatment of disease.

AN AID TO MATERIA MEDICA. By R. H. M. Dawborn. Third edition, revised and enlarged. By Wolsley Hopkins, M.D.

New York: G. P. Putnam's Sons, 1894.

This is an exceedingly condensed quiz book, syllabus, or summary of modern materia medica, interleaved for additions by the student. In the back portion of it is a list of the newer unofficial drugs which is quite complete and interesting, but we fail to see how the book can be of great value to students, except those who are attending a course of lectures in which the lecturer follows an arrangement such as here given. The size is small octavo and the number of pages one hundred and thirty-three.

THE TREATMENT OF TYPHOID FEVER. By D. D. Stewart, M.D.

Detroit: George S. Davis, 1894. Price, 25 cents.

The very excellent work which Dr. Stewart is capable of doing and has already done is a guarantee that this little volume will prove interesting reading. Its contents consist of four chapters,—the prophylaxis of typhoid, the general management of a case, specific and antiseptic treatment, and the treatment of special symptoms and complications,—a summary which gives a very good idea to the reader of the ground which is covered by the book. The very latest ideas from the most prominent members of the profession are quoted with sufficient fulness to provide the purchaser with the information he desires, and while there are a few typographical errors, the general excellence of the medical advice is such as to guarantee the success of this little handbook.



## Correspondence.

## PARIS.

(From our Special Correspondent.)

There being such a multitude of large hospitals in Paris, I found some difficulty in visiting many of them. There are no fewer than seventeen thousand hospital beds within the city limits, besides numerous dispensaries attached to the hospitals and also separate from them. As the chiefs are very uncertain in their visits, much time is wasted in trying to see the clinics, so I contented myself by "following," as it is termed, a few of the best-known operators.

Paris can boast of but few well-built, or what is commonly called modern, hospitals, the Cochin approaching more to the pavilion plan; some of its buildings, however, are very old. Hôtel-Dieu is considered their best, but I think few would call it a very good model. The Necker is, to my mind, a better institution, with some very good modern improvements, especially the venereal clinic and the operating amphitheatre, while of the Salpêtrière, Saint-Louis, Charité, and Laennec nothing but their size can recommend them.

At the Necker is the most complete arrangement for the study of gonorrhœa to be found in Europe. The clinic is under the charge of Professor Guyon, while the out-patients' department is conducted by Dr. Ganet.

Each case is thoroughly examined physically and the discharges microscopically before treatment is given, careful histories taken, and all changes in treatment recorded. As the daily clinic is large, the statistics from such a place should be exceedingly valuable and reliable. The irrigators proposed by Professor Guyon are in constant use, both in acute and chronic gonorrhœa and in cystitis. The liquid is placed one and one-half yards (or metres) above the bed or table upon which the patient lies, and the force thus obtained is sufficient to convey the liquid into the bladder, a small glass tip at the end of the rubber tube being held firmly in the meatus.

In this manner he uses the potassium permanganate treatment. From one to two litres of a watery solution of potassium permanganate, in varying strengths, from 1 to 4000 to 1 to 1000, depending upon the stage of the disease, are passed into the bladder once or twice daily, the patient raising himself to a sitting posture and emptying his bladder from time to time. In this way the bladder may be thoroughly

irrigated without the passage of a catheter, which, in cases of stricture, will often be of considerable advantage.

In the same way solutions of silver nitrate (1 to 1000) and of sublimate (1 to 5000) are used in cystitis. Professor Guyon also uses stronger solutions of silver nitrate (one per cent. to five per cent.) and of cupric sulphate (two per cent. to seven per cent.) in obstinate cases of gonorrhœa.

One very important thing taught here is the absolute cleanliness in the use of instruments. Each patient's genitals are washed with boracic acid, the instruments kept in carbolic or boracic solutions, and all instruments are carefully cleansed as soon as used. In this way they have been able to avoid those troublesome complications occasionally seen in dispensaries where such care is not taken.

After about two years' use of the permanganate treatment, Professor Guyon is so well satisfied with it that he invariably commences treating in this way every case of acute gonorrhœa that comes to his clinic.

The use of plaster splints in fractures prevails in most of the hospitals. Professor Ferrier, at the Bichat, applies plaster at once, leaving an opening or slit down the front, holding the splint in place by tying with a bandage in three or four places; while Professor Duplay, at Hôtel-Dieu, cuts away part of the splint or cast, leaving two lateral strips about two or three inches wide, which are held in place by a roller bandage, or sometimes strips of rubber plaster; he adds oiled silk to the dressings before applying the splints. The early resort to massage is considered very essential, Professor Ferrier commencing on the tenth day.

Dr. Pozzi, at Hôpital-Broca, has now practised cauterization of painful ovaries for over two years, and considers the plan very successful. In one case, in which he operated upon both ovaries, the woman has since given birth to a child.

He performs his laparotomies in the ordinary recumbent position; draws the ovaries out of the abdominal opening. If the ovary is totally diseased, he removes it; but if a part is found to be healthy, he amputates the affected portion, cauterizes the stump, then sews the end with silk. If there are some small cysts, he opens them by touching with the Paquelin point. The ovary being returned to the abdomen, he examines and treats the other in a similar manner. Often as many as six small cysts are opened in this way in each ovary. In cases of hysteroplasty he attaches the ante-

rior surface of the uterus to the abdominal wall instead of the fundus, claiming better results if the uterus becomes pregnant.

Dr. Chaput, at Salpêtrière, operated upon a case of patellar fracture of four months' standing, in which there was almost two inches retraction. After cutting away the lateral attachments, he was obliged to cut the patellar tendon to effect apposition. The fractured surfaces being sawed away, he perforated each fragment in two places, passed silver wire through, and in turn drew back through the same opening by means of the wire strong braided silk ligatures. These being tightened and tied, apposed the two fragments, the ligaments, muscles, and skin being sewn as nearly as possible in their former relations; the knee was loosely dressed and the patient returned to bed without a splint. He commences passive movements in eight days, and allows the patient to leave his bed after four weeks. This is the third case he has treated in a similar manner, the other two recovering with useful limbs.

Lucas Championnière, at Saint-Louis Hospital, performed lately his sixteenth operation upon the kidney. In this case, which was for floating kidney, he used his own modification of the Reverdin needle, and very quickly and easily sutured the capsule to the abdominal wall. He drains with large quantities of iodoform gauze, and over this places bags of lint or gauze containing what he terms the Saint-Louis sachet powder, the formula for which I give below, thinking it might prove useful to some one who wishes a cheap and very good substitute for iodoform. It is composed of equal parts of iodoform, powdered cinchona, benzoin, and magnesium carbonate.

In cases of laparotomy where the intestines are exposed for some time, as in a recent case of hysterectomy, he employs the carbolic spray, and where there is a suspicion of infection he uses a four-per-cent. solution of carbolic in the abdominal cavity.

M. Péan, at the International Hospital, still following the old custom, operates in full dress. Although he does some general surgery, the most of his work is confined to gynecology. He still operates almost entirely without the ligature, and in vaginal hysterectomies he sends the patient to her bed with as many as fifteen forceps in her vagina, the remaining space about the instruments being filled with iodoform gauze.

M. Péan also uses an electrical machine for drilling and sewing. The power is taken from the lighting apparatus. The table on which it rests can be approached to the bed or table,

and is quite a time-saving as well as a labor-saving appliance.

The Reverdin needle is in pretty general demand among the French surgeons, doing away almost entirely with the use of the needle-holder. They employ the curved and the straight, the latter being almost always used for skin-suture. Chloroform is the almost universal anæsthetic employed. By means of a special bottle it is administered in very small quantities. M. Chaput uses bromide of ethyl, and some surgeons still prefer the A.-C.-E. mixture. M. Ferrier administers several gallons of oxygen gas after each operation. I did not see ether given once.

Antisepsis is still much more frequently employed than asepsis; in fact, Dr. Ferrier is the only one I have seen who carries out the principles of asepsis. He uses gauze for sponging, keeps his instruments dry in sterile trays covered with gauze or towels, but sometimes employs solutions of boracic acid. He prepares the patient with soap and water and a sterile towel, pulls out the umbilicus with toothed forceps, and carefully scrubs in abdominal cases. Most surgeons, however, employ the following method: green soap, dry towel, ether, alcohol, and sublimate (1 to 2000), in the order given.

PARIS, FRANCE, May, 1894.

#### CASTRATION FOR HYPERTROPHY OF THE PROSTATE.

To the Editors of the THERAPEUTIC GAZETTE:

DEAR SIR:—May I ask the privilege of putting on record in your columns a statement as to a matter which may some day be of more or less surgical interest?

In December, 1892, I requested one of my assistants (Dr. Kirby) to make a series of experiments on dogs, with a view to determining whether or not castration would be followed by notable atrophy of the prostate. The thought that this was possible had been suggested to me by the comparison long ago made by Velpeau and afterwards by Sir Henry Thompson between the prostatic and the uterine fibromyomata.

Control observations as to the weight of the normal prostate in dogs were begun at once. The first castration was done January 27, 1893; the others followed at intervals of a few days. The results, showing atrophy, first, of the glandu-

lar and then of the muscular elements, were so decisive that I embodied in a paper I was then writing the suggestion that castration might be a valuable therapeutic measure in many cases of hypertrophied prostate. So far as I know, the suggestion had never before been laid before the profession.

I subsequently learned of the observations of John Hunter and Owen, and the confirmatory investigations of Mr. Griffiths, as to the changes in and out of the rutting season in the prostate of the mole, hedgehog, and other animals, and as to the effect of castration in various species. Griffiths's observations appear to have been confined to animals already castrated for other reasons; no definite series of experiments is mentioned. He maintained, moreover, that the enlargements of the gland were not to be classed with the uterine fibro-myomata. His paper, which was written to demonstrate that the prostate is in its essential significance a sexual and not a urinary organ (a subject which has long been under discussion), contained a few illustrations taken from various sources of atrophy of the prostate in eunuchs. I found, in addition, a note by Harrison, that in cases of sterility in the male the prostate had been shown to be atrophied.

No reference existed in surgical literature to any possible application of these facts to the treatment of cases of hypertrophied prostate, but they strengthened me in my decision to bring the matter up for consideration.

I read the paper in Buffalo, N. Y., on June 1, 1893, before the American Surgical Association. Abstracts were published during June in most of the medical journals of this country. On August 1 it was published in its entirety in the *Annals of Surgery*, and on September 9 a full abstract appeared in the *British Medical Journal*, that part of it relating to castration being unabridged. Since June, 1893, the following communications relating to the subject have appeared:

*Centralblatt für Chirurgie*, No. 35, September 2, 1893.—Ramm, of Christiania, reported two cases operated on earlier in the year, with marked improvement.

*Ibid.*, No. 17, April 28, 1894.—The same writer gives the dates of his operations as April 3 and April 25, 1893, and reports a practical cure in each case.

*British Medical Journal*, September 16, 1893.—Mr. C. Mansell Moullin wrote that "the question of castration as a means for procuring involution of the enlarged prostate, raised by Professor J. W. White in his address to the American Surgical Association, deserves more

than passing consideration," and stated that he had discussed it with a patient in November, 1892. He adds, that "one single instance in which definite reduction in size was proved to have taken place would be of incalculable value."

*Ibid.*, September 23, 1893.—Mr. Reginald Harrison wrote, "As bearing upon the correspondence that has followed Dr. White's remarks on castration in preventing growth of the prostate," that the suggestion had been made to him by a patient some years ago, and that, as a compromise, he had subcutaneously divided the vasa deferentia. He knew no more of the course of the case, except that the patient was alive and well six or seven years later.

(In the discussion that followed the reading of my paper in Buffalo, Dr. Mears asked if division of the vasa deferentia might not accomplish the same result as castration.)

*Ibid.*, September 23, 1893.—Mr. MacMunn suggested that the sexual history, past and present, of the subjects of enlarged prostate be more freely studied, as well as the conditions of the gland in different races of men and the lower animals.

*Ibid.*, September 30, 1893.—Mr. Moullin again called attention to the importance of getting definite information as to the effect of castration upon the abnormally-enlarged gland in aged persons, as he says that it must now be regarded as an established fact, not only for animals, but for man, that "castration in early life prevents the full development of the prostate, and in adult life causes the normally-developed gland to atrophy."

*Ibid.*, September 30, 1893.—Mr. Griffiths called attention to Ramm's cases, and added, without allusion to my paper, that "this method of treatment is no doubt likely to suggest itself to any one who has studied the nature and function of the prostate in its relation to the sexual function." He said further that it may in some cases prove an effectual remedy, but went on to call attention to the lack of proof that prostatic enlargement depends on sexual excitement.

*Ibid.*, May 12, 1894.—The same writer called attention to his own letter of September 30, and sent a translation of Ramm's latest reports of his two cases, already alluded to.

*Ibid.*, November 18, 1893.—Mr. Arthur Powell described a case which he said might "be of interest in connection with Professor White's recent address," and in which a patient with retention of urine from enlarged prostate, having undergone removal of the

right testicle for a nodule and having a small left testicle, became impotent, and obtained relief from all his urinary symptoms. Rectal examination showed "marked diminution in the size of the prostate."

*Medical News*, Philadelphia, December 30, 1893.—Dr. Francis L. Haynes, of Los Angeles, Cal., announced his first operation; this was followed by two others.

In the *Buffalo Medical and Surgical Journal*, March, 1894, he thus describes his cases: "White's Operation: Orchectomy for Hypertrophy of the Prostate." Following the suggestion of Professor White, of Philadelphia, I have three times made double castrations in old men afflicted with prostatic hypertrophy. 1. Operation eighty-four days ago, in a case of two years' standing, of moderate severity. The patient is practically cured. 2. Operation forty-seven days ago, in a desperate case, requiring catheterization every two hours, complicated by intense cystitis and by morphinism acquired as a result of frightful suffering. With the most devoted nursing, this old man has improved wonderfully. Cystitis has disappeared; one-third of the urine is passed spontaneously; catheter is used every four or five hours; morphinism has been cured; general condition good. 3. Operation fourteen days ago. Incipient case; catheterization almost impossible because of the peculiar development of the prostate."

In a fourth case, section of the vas deferens gave no definite results.

During Christmas week, 1893, I saw, in consultation with Dr. F. Fremont-Smith, at St. Augustine, Fla., an apparently hopeless case of hypertrophied prostate with marked sepsis, cystitis, beginning uræmia, etc. I advised a trial of castration, as the condition forbade any direct attack upon the prostate. Dr. Fremont-Smith has just reported the case in a paper read before the Genito-Urinary Section of the New York Academy of Medicine. The patient fifteen weeks after operation had gained forty-five pounds and has no symptoms of cystitis or other urinary trouble; he urinates freely and normally.

On January 31, 1894, I operated on a medical man, aged sixty-nine years, who had a very large prostate, about half the size of an orange; who had passed no urine except by catheter for years; whose urine was loaded with mucus, was offensive, and at short intervals was filled with blood.

At this time,—fourteen weeks later,—while he has not yet urinated spontaneously, rectal examination shows a reduction of the size of

the prostate to about its normal dimensions. The catheter, which formerly was introduced for nine and a half inches before reaching urine, now goes in only eight inches, when urine begins to flow. Its introduction is easy and painless instead of difficult and very painful. No blood has appeared in the urine for two months. The urine itself is entirely normal in appearance, odor, and in all other respects. I have during this time suggested the operation to three other patients, all of whom have declined it on account of my frank statement that it was yet in the experimental stage and that no *promise* of benefit could be given.

The idea seems to have occurred vaguely to several persons, but certainly no one had made it public or even formulated any distinct suggestion in regard to the matter prior to my paper.

Ramm's cases, though not published until between three and four months after my paper, appear to give him the operative priority in Europe, while Haynes undoubtedly did the first operation of the kind in this country.

This, so far as I know, is the evidence existing on this subject up to this date. It would certainly seem to establish the claim of the operation to further and much more extended trial, and it shows, I think, that even on a basis of experiment and theory alone I was justified in suggesting it to the profession.

I am, etc.,

J. WILLIAM WHITE.

1810 SOUTH RITTENHOUSE SQUARE,  
PHILADELPHIA, U.S.A., May 25, 1894.

#### TREATMENT OF TOBACCO HABIT.

To the Editors of the THERAPEUTIC GAZETTE:

DEAR SIRs:—I send you with this a prescription which I have found very useful in the treatment of the tobacco habit, and which, I trust, may interest the readers of the THERAPEUTIC GAZETTE:

R Gold and sodium chlor., gr.  $\frac{1}{4}$ ;  
Strychninæ nit., gr.  $\frac{1}{16}$ ;  
Nitro-glycerin, gr.  $\frac{1}{16}$ ;  
Atropinæ sulph., gr.  $\frac{1}{16}$ ;  
Tinct. digitalis, ℥iij;  
Capsicum, gr.  $\frac{1}{4}$ ;  
Salicin, gr. i;  
Cinchonidinæ sulph., gr. i.  
For one pill.

S. H. CONDEN, M.D.

MORRILLTON, ARK.

# —THE— Therapeutic Gazette.

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## Original Communications.

### URETHRAL CARUNCLE; CURETTING FOR ABORTION; PESSARIES.

CLINICAL LECTURE DELIVERED AT THE JEFFERSON HOSPITAL,  
OCTOBER 31, 1893.

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**G**ENTLEMEN:—The first patient I bring before you is a young woman with a projection from the orifice of the urethra. This has been troubling her for some length of time,

and has been associated with much pain and distress. She has been treated in the hospital before for nervous disease, and it is quite possible that this growth may have had something to do with it. This growth is known as a urethral caruncle; it affects the urethra, is papillary, arising from a thickening or localized inflammation of the mucous membrane of the urethra, probably begins in a gland, the duct of which becomes occluded, causing the wall to be thickened and form an obstruction, thus leading to its extrusion. The growth becomes abraded, leaving a red, strawberry-like mass,

sometimes protruding from the orifice of the urethra; its nerve-terminations are exposed, rendering it extremely sensitive. Passage of urine over it produces severe, agonizing pain. Its projection from the orifice of the urethra causes it to be frequently irritated by the clothing, by pressure, and it is a source of pain during coition. It may sometimes be situated some distance up the canal, requiring the urethra to be dilated for its complete removal. In some cases a number of growths may be present. Treatment consists in taking a pair of forceps, drawing the growth down, and snipping it off with scissors. The base may be cauterized with nitric acid or with the actual cautery. Before proceeding to treatment, however, it is quite important to keep in mind the fact that not every protrusion from the urethra is necessarily a caruncle, as we may have a prolapse of the wall of the urethra in which the orifice will be seen in the centre of the prolapsed portion. The excision of such a mass would mean the cutting out of the entire section of the urethra, and almost certain resulting stricture. Again, we may have the bladder wall prolapsed through the urethra, or, in other words, a vesical hernia, so that this condition must also be eliminated before we resort to operative procedure. Pressure against the urethra with the finger, or the introduction of a catheter or bougie, will be sufficient to determine its true character. In removing a caruncle, as in every operation about the genital tract, we are careful to have the parts thoroughly clean to avoid danger of infection. We want the wound to heal up as quickly as possible. If the parts are kept clean it is not likely to give rise to any serious trouble. Healthy urine flowing over the part does not injure it. As a germicide or disinfecting agent, we are using at present in this clinic a solution of oil of cinnamon, taking one drop of oil of cinnamon to the ounce of distilled water (1 to 500). The effects of this agent have been carefully investigated in the laboratory of the college and also in the private laboratory of Dr. D. B. Kyle, who has devoted much attention to it. It is found in this strength to be a very effective germicide. Dr. Kyle's theory is that the oil of cinnamon, like all volatile oils, coagulates or contracts the protoplasmic envelope of the germ and thus imprisons it in its contracted shell, rendering it inert. As the agent has been tried effectively in the laboratory, we propose to make some clinical studies with it, and feel certain that if it is satisfactory it will be far preferable to the germicides we are now using, as the bichloride, on account of its poi-

sonous character, cannot be used in the peritoneal cavity. In addition, it is a source of danger, from the possibility of the solution being mistaken and used for other purposes. The oil of cinnamon gives a very fragrant odor, and in the strength of 1 to 500 reddens the skin and causes it to tingle. It is free, however, from poisonous effect, and, if necessary, could be used in the abdominal cavity without danger. Now, having carefully cleansed the parts, seized this growth with a pair of forceps, and snipped it off close to its base, we find that considerable bleeding results. In the excision of large masses, bleeding not infrequently is free. It can, however, be readily prevented by packing gauze tightly into the vagina, making pressure upon the urethra, and with a pad pressing the urethra firmly against the symphysis. The patient will be permitted to void her urine, as the evacuation of the urine will be attended with less danger and discomfort than would be the use of the catheter. If it is necessary to use the catheter, the parts should be carefully sponged first with a disinfectant solution before the catheter is introduced, and the latter should be a glass one which has been carefully disinfected and kept in a disinfectant solution during the intervals of its use. It will not be amiss for me to say at this juncture that you cannot observe too great care in the use of the catheter, and for whatever purpose it may be required, it should be the rule to carefully cleanse the vestibule before it is introduced. For this reason I would advise you to discard the old procedure of introducing the catheter by touch, as by inspection you are better able to see that a clean instrument is passed through a clean surface, and the slight offence to the modesty of the patient does not compensate for the danger of infection of the urethra and bladder and the long-continued suffering resulting from a urethritis or cystitis.

*Curetting for Abortion.*—The next patient was brought to the house by Dr. Fisher, chief of the clinic, from one of the smaller streets of the city. She had undergone an abortion, and when he called to see her he found a portion of the placenta remaining. She had quite a severe hemorrhage, causing her to present the blanched appearance you now see. Since her admission to the house she has had an elevation of temperature, reaching last night 101° F., indicating that there is some product remaining. We have placed her under an anæsthetic, and have carefully washed the vagina with a solution of creolin and soap, wrapping the finger with gauze in order to thoroughly clean out the crypts and folds. We will proceed to the

dilatation of the cervix and the use of the curette. Now, as I have repeatedly endeavored to impress upon you, in all cases of sepsis, whether arising as a result of abortion or following confinement, the important indication is to thoroughly sterilize the uterus. This is frequently attempted by the use of disinfecting injections; but when we consider that the uterine mucous membrane is covered over with decidua and *débris* that is thrown off from the involuting uterus, we can readily understand that even the most powerful germicides will only act on the surface, while beneath it will remain large colonies of multiplying germs, the products of which are absorbed, producing elevation of temperature and secondary suppurative foci. The disease may extend either through the mucous membrane of the uterus to that of the Fallopian tubes and cause a pelvic peritonitis, or infect the ovaries, producing ovaritis or collections of pus in the tubes; or we may have inflammation passing through the blood-vessels, infecting the uterine sinuses and producing multiple abscesses therein, or secondary inflammations in the larger veins, producing phlegmasia; or it may, again, pass through the lymphatics, producing suppuration in the pelvic lymphatic glands. Through the infection of the blood-vessels we may have large collections of pus in the cellular tissue of the broad ligament while there has been no inflammation of the tubes, or, again, we may have tubes the source of infection,—that is, the infection may travel through the tubes, setting up peritonitis or ovaritis, without having caused inflammation in the tube itself. When we consider, then, the danger to which every patient is subject, and realize that the sterilization cannot be accomplished by irrigation alone, it is incumbent upon us to exercise prompt measures to prevent the infection extending beyond the surfaces already involved. This is best accomplished by carefully dilating the cavity, particularly in abortion, and the use of the sharp curette, going over the entire surface of the cavity, scraping away the *débris*, and either irrigating the cavity through the handle of the curette or following curetting by irrigation, in this way sterilizing the surface as thoroughly as possible and removing the infected material. As we are not always absolutely certain, however, that the curetting has been complete and that some small particles of infected material may not still remain, it is well to provide for the thorough drainage of the uterus, so that the blood resulting from the curetting shall not be retained, again infected, and rendered a source for further propagation of poison. This drain-

age is best accomplished by packing the cavity with iodoform gauze; the pressure of the gauze in the cavity prevents further bleeding, promotes by its capillary action thorough drainage, stimulates by its presence as a foreign body contraction of the uterus, produces a current of serum into its meshes, thus increasing the eliminating power of the uterus, keeps the surfaces apart, and, in addition to drainage, promotes the more rapid decrease of the organ.

Now, in dilating this canal, you will notice that I have used graduated bougies in preference to the parallel-bar dilators. I do this for the reason that dilatation can be accomplished more readily, with less injury to the cervix, as the bougies stretch the cervix on all sides and produce less tendency to laceration. The cervix is held by the volsellum, and for this purpose I use a three-pronged instrument, as it holds more firmly and is consequently less likely to do injury. The uterus is pulled over the bougies. In introducing the bougies it is important to exercise care that they should not, particularly the smaller ones, be used with force, as in weak walls they may puncture the walls of the uterus, as I have had occur in my own experience in two cases, in neither of which did the patient suffer any inconvenience. By the use of these dilators the cervix is distended to the size of the largest number,—43. The curette I use is what is known as the Duke curette, with an opening through the handle, by which, on attaching it to a fountain syringe, a current of disinfecting fluid can play constantly upon the curetted surface, washing away the *débris* as fast as it is scraped off. For the purpose of irrigation through the curette, we use a one-per-cent. solution of creolin in distilled water. As the curetting is done, the finger of the other hand may be passed into the vagina alongside of the cervix, pressing the uterus against the instrument, in this way controlling its action. With the completion of the operation a gauze tampon is carried to the fundus of the uterus, packing it well into the body of the organ for the purposes we have already mentioned. Now, as I pack the gauze into the cavity of this uterus, we recognize that it still continues to bleed, and on looking at it we see we have torn the soft, friable cervix on the right side, probably through the circular artery. In order to prevent further bleeding and relieve the patient of the effect of such a tear, I will introduce a suture here upon the side, bringing together this surface. The gauze is pushed over so that it will not be included in the suture. There is still remaining a sufficient amount of cervical canal to serve

every purpose. The patient will be kept quiet in bed, and permitted to pass her urine, if she can do so; otherwise the catheter will be used. The bowels will be looked after, and the gauze will be removed at the end of three or four days. In considering the progress of infection, we will find that those cases in which the disease is carried into the system either by the blood-vessels or lymphatics are much more active and rapid in their course than where it passes by the continuous mucous membrane. The introduction of the poison through the tube leads to a localized peritonitis and gluing up of the abdominal end of the tube and the consequent localization of the disease. In the blood-vessels, however, this is not so rapidly accomplished, and the poison has the greater opportunity for more thorough dissemination. Localized abscesses may form in the walls of the uterus, and these cases will be characterized by exceedingly high temperature. I remember a case in the Philadelphia Hospital, with a temperature reaching 107° F., only modified by the use of the cold pack. The patient died with a temperature of 108° F. An autopsy disclosed less than a teaspoonful of pus in the uterine sinuses upon one side, which was the only pathological symptom present.

*Pessaries.*—I have here a specimen that illustrates the importance of careful consideration in the use of pessaries. The one I show you is a Hodge pessary, covered over with calcareous deposits from the secretions of the vagina; it was worn eleven years without removal. It was removed this morning in the dispensary service, and was found with this coating. Such a deposit upon a pessary roughens its surface, giving rise to irritation of the mucous membrane and ulceration. If pressure is severe, perforation of the anterior or posterior wall may occur, resulting in a recto- or vesico-vaginal fistula; or the irritation of the pessary may produce exuberant granulations, which may cause it to be completely buried in the tissues. I was called some years ago to see a case of this kind, in which an old woman was suffering from hemorrhage and a very profuse discharge. She was supposed to be suffering from malignant disease. Upon examination, I found the small end of a pessary projecting, the posterior bar of which was buried in tissue to the depth of more than half an inch and firmly fixed. As it would have required considerable dissection to cut the pessary out, I preferred to draw it down upon one side and with a pair of bone-pliers cut through it. This was done on the opposite side and the remaining portion pulled

out of the track. The patient recovered, and, it is needless to say, the condition for which the pessary was used was also cured, though this is not a plan of treatment for prolapse I would recommend. In the Philadelphia Hospital some years ago I removed a glass pessary from a woman who had worn it for thirteen years. The pressure of the pessary had given rise to a cicatricial ring immediately beneath it, so that only a small portion of the pessary could be exposed. It was removed by passing a pair of fenestrated forceps arranged something like obstetrical instruments, so that one blade could be passed after the other. After the forceps were applied, it required considerable work to deliver the pessary. Unless you have an instrument specially devised, the removal of these glass pessaries is attended with considerable danger of their being broken. A case occurred in the Philadelphia Hospital in which a glass ball was broken in an old woman, causing perforation of the bladder and a vesico-vaginal fistula high up in a cicatricial canal that was exceedingly unfavorable for operative procedure. The result was increased suffering and distress to this old lady. An accident of this kind occurred to the late Dr. Levis, of this city, who immediately packed the vagina with plaster of Paris, covering over the glass, and after this had become firm and hard, the whole mass was removed, thus saving the surface from being injured by the glass.

#### THE TREATMENT OF EMPYEMA, WITH SELECTED CASES.

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IN its broadest application an empyema is a collection of pus in one of the natural cavities of the body. As usually employed, however, it refers to a purulent collection in the pleural sac, and it is here used in this sense. Among the common causes of this condition are a previous pleural effusion which has become purulent, or as occurs in the course of various infectious diseases, the collection may be purulent from the beginning. Occasionally an empyema may result from an hepatic abscess which has perforated the diaphragm, from a pulmonary abscess which has discharged through the pleura, or from an abscess elsewhere which has found its way into the pleura. Finally, it



may result from a fractured rib or a penetrating wound of the chest.

Fluid collections in the pleural sac may accompany, besides pleurisy, simple and tuberculous pneumonia, pulmonary tuberculosis, and typhoid fever. The exudation in these cases is serous or sero-fibrinous, and may remain in this condition or may become purulent. In the light of our present knowledge, the change from the serous to the purulent condition must be explained by the invasion of micro-organisms.

The bacteriology of this subject has received considerable attention in recent years. As the result of his investigations, Bewley (*Dublin Journal of the Medical Sciences*, 1890) makes the following classifications of empyema:

1. Those cases in which ordinary pyogenic micrococci make their way into the pleural sac through an opening in the chest-wall or from the lung, by the bursting of a pulmonary abscess, or gangrene, into the pleural cavity.

2. Those cases occurring in connection with croupous pneumonia and caused by pneumococci.

3. Those occurring in persons afflicted with phthisis, and which are tubercular.

4. Those cases in which, under various circumstances, pyogenic micrococci are able to enter and live for some time in the tissues of the body without doing harm.

5. Those cases which are a part of a general pyæmia.

Coplick (*Archives of Pediatrics*, 1890) records his results of careful bacteriological investigations of twelve cases of empyema in children. These cases are divided as follows:

1. Those in which the bacterioscopic results are not uniform and the micro-organisms found not diagnostic.

2. Those in which he was able to establish the presence of the pneumococcus of Fränkel and Weichselbaum in the purulent exudate.

3. Empyema occurring in tubercular subjects.

4. Those cases in which a focus of suppuration situated outside the chest can be pointed to with a degree of probability as the possible source of infection. He arrives at the conclusion that a large proportion of empyemas in children follow or complicate processes in the lung of an acute character.

Parmenter (*Buffalo Medical and Surgical Journal*, January, 1894) quotes the classification of Courtois-Suffit, which divides cases of purulent pleurisy into (a) pure and (b) mixed forms. The first class includes,—

1. Empyema from the pneumococcus. This is said to form twenty-five per cent. of the

purulent pleurisy of adults and fifty per cent. of the same affection in children.

2. Empyema from the streptococcus. This is the common microbe of suppuration.

3. Empyema from the bacillus tuberculosis.

4. Empyema due to the encapsulated bacillus of Friedländer and to the typhoid bacillus of Eberth. These forms are said to be rare.

Mixed forms include,—

1. Empyema due to the pneumococcus and the streptococcus together.

2. Empyema due to the typhoid bacillus and the streptococcus.

3. Empyema due to the bacillus tuberculosis and the streptococcus, or to the staphylococcus, or both together.

4. Putrid or gangrenous empyema. In addition to the streptococcus and the staphylococcus, the micro-organisms of putrefaction are present.

It will thus be seen that a number of competent independent observers, after carefully-conducted experiment, have arrived at practically uniform results,—namely, the demonstration of the constant presence of microbes in empyemas. It is a question whether those cases in which the pneumococcus or the bacillus tuberculosis only are found should be classed as strictly purulent collections, although the fluid may be turbid from admixture of fibrin and leucocytes. It is more in harmony with what is known of this process elsewhere to consider the purulent process to be due to the presence of pus microbes alone or to a mixed infection.

It will be, perhaps, impossible clinically to classify many of the cases that are observed, but this does not seriously modify the treatment which should be instituted. The previous history will, of course, have an important bearing in many instances. If we know, for example, that an attack of pneumonia, influenza, or typhoid fever has preceded the pleurisy, and if there is no other cause to explain its presence, an etiological relation may be inferred, or if the patient is known to have previously suffered from pulmonary tuberculosis, it is reasonable to suppose that the case is of this nature.

The symptoms of purulent pleurisy may develop suddenly, but more frequently the onset is insidious, in which case the pleural collection is very apt to be overlooked unless this possibility is borne in mind. There is, however, usually fever of an irregular type, pain in the chest, cough, and dyspnoea on exertion, although any or all of these may be wanting.

The diagnosis is to be made by eliciting the usual signs of fluid in the chest and deter-

mining the character of the fluid by the exploring-needle. It must be borne in mind that the physical signs, like the symptoms, may be obscure, but by a careful examination of the chest a mistake will be infrequent. This, of course, is always to be confirmed by hypodermic puncture.

An empyema may terminate in spontaneous cure by absorption of the fluid, in perforation of the lung and expectoration of the collection, or by perforation of the chest-wall. This termination is very rare, however, and the condition, if unrelieved, tends to a fatal issue.

*Treatment.*—The presence of pus in the pleural cavity having been detected, the use of drugs is not to be considered, except in so far as is made necessary by the general condition of the patient.

The different methods of operating for the relief of this condition have been classified by Steele as follows:

1. Aspiration.
2. Aspiration and antiseptic irrigation.
3. Thoracocentesis with trocar and canula.
4. Thoracocentesis, with subsequent drainage.
5. Simple incision.
6. Incision and drainage.
7. Incision, with through-and-through drainage, with or without the addition of antiseptic measures.
8. Subperiosteal resection of a rib and drainage.
9. Thoracoplasty (Estlander's operation).
10. Perflation.

A pleural effusion having been recognized, if of recent formation, and if the patient's strength be good, careful aspiration with aseptic precautions may be done. If the effusion is one of long standing, and if the patient's condition is one of hectic, showing that the blood is already poisoned from absorption, then free drainage must be at once instituted. If the needles used in the aspiration are surgically clean, it need not be feared that on account of the puncture, if the fluid reaccumulates, it will assume a more unfavorable character than before. Should the accumulation return, then a more radical operation becomes necessary for its relief.

A review of the literature of the subject impresses one with the marked diversity of opinion still existing in the profession regarding the relative merits of the several procedures enumerated. For example, Immermann (*Deutsche Med. Woch.*, 1887) advocates simple aspiration, and objects to costal resection on account of the resulting deformity. He considers Bülow's siphon drainage, or aspiration drain-

age, the ideal treatment. This method is also highly endorsed by Powel, Curschmann, Runneburg, and others.

Steele, on the other hand, has collected one hundred and twenty-one cases treated by aspiration (*Journal of the American Medical Association*, 1888). Of these, but twenty-three (nineteen per cent.) were cured, six died, and the balance were sooner or later subjected to a more radical treatment, usually incision.

Mader, Rogée, Rochelt, and Williams have devised special valvular tubes, which are intended, when introduced in the chest-wall, to allow the escape of fluid from the pleural cavity, but to prevent the entrance of air. In all of these methods the dominant idea is to withdraw the fluid without allowing the ingress of any air into the pleural sac.

Even conservative writers generally concede, however, that when the chest contains pus, nothing short of thoracotomy will suffice to meet the indications present. The operation is a simple one, and may be performed quickly and safely, barring the danger which may attend the rapid withdrawal of a large collection of fluid from the pleural cavity. No attempt need be made to prevent the entrance of air within the chest. The results of this operation have been very good, as is attested by many reported cases. For instance, Griffith (*British Medical Journal*, 1887) reports fifty cases treated by this method. Of these, thirty-five recovered, five were discharged with sinuses still open, and six died, three from already advanced phthisis.

Owing to difficulty in securing free drainage by simple incision, frequently on account of the close proximity of adjacent ribs, costal resection to accomplish this object has been advised and practised by a large number of surgeons. This allows of very free drainage and, if need be, intrathoracic exploration, without adding anything to the dangers of simple thoracotomy. The results obtained by costal resection are much better than by the other methods described. As an example of the utility of this operation the experience of Holsti may be quoted. This author reports (*London Medical Record*, 1887) twenty-seven cases of empyema operated on by excising a portion of one rib, followed by the introduction of two drainage-tubes; of these, twenty-four recovered, two were discharged with a fistula, and one was under treatment at the time of making the report. Among others who employ this method may be mentioned Schede, Pel, and König.

Finally, Estlander advocated the resection

of portions of several contiguous ribs. This method is especially applicable to those chronic cases in which the lung has little or no tendency to expand after the withdrawal of the fluid. Many cases are reported which attest the value of this operation. The object aimed at in Estlander's thoracoplasty is, by removing portions of several ribs, to allow the chest-wall to retract to meet the more or less collapsed lung, and, by the formation of adhesions, to secure obliteration of the pleural cavity. To be successful, a sufficient number of ribs should be resected to accomplish the desired result. Böckel reports a case in which he removed portions of seven ribs and part of the scapula; the patient recovered and improved in health. He says that want of success in this operation is due to too great timidity on the part of the surgeon.

Richelot and Moreau, following Quenu, have performed section of the ribs, without removing any portion, to secure the sinking in of the chest-wall, as follows Estlander's operation. It would not appear that this method possessed any advantage over the latter, while it must be less certain in its beneficial effects.

The position of the opening is a matter upon which most authors lay considerable stress. Sutherland (*Lancet*, London, January 27, 1894) differs from this view, and states that the selection of the point for the introduction of the drainage-tube may be made quite apart from any considerations of drainage. The emptying of the pleural cavity, he contends, is not due to the action of gravity, but to the forcible expulsion of the fluid by the expansion of the lung and the pushing up of the diaphragm. If these are secured, he says, the fluid will be driven out irrespectively of the position of the opening, and such arrangements as a dependent opening or two openings are quite unnecessary. There will usually be no contraindication, however, to opening at a low point, and we believe that this plan will be followed more uniformly by good results.

The other methods of treatment mentioned have nothing to recommend them and need not be further considered.

That no one operation will be uniformly indicated in every case of empyema will be accepted without argument, but a tendency towards overdue conservation has certainly existed. The safety of a patient does not always lie in doing the least that is possible. We know that with imperfect drainage in empyemas, as in all other collections, sinuses remain indefinitely and continue to secrete pus, thus exposing the patient to the danger of amy-

loid degeneration of the viscera. It may be put down as established, that in those cases in which sinuses persist, the drainage has been imperfect. Osler ("Practice of Medicine," 1892) pertinently says, "It is sad to think of the number of lives which are sacrificed annually by the failure to recognize that empyema should be treated as an ordinary abscess, by free incision." Such a commentary from so distinguished an authority should awaken both physicians and surgeons to a proper appreciation of the necessity for early and free drainage. Another common error results from the mistaken conception of "free drainage." It is a not infrequent experience to see cases in which, in spite of alleged free drainage, improvement is not observed, and upon investigation it is found that the drainage *did not drain*. There are few affections in which surgery can claim greater success than in empyema. It is not uncommon to observe a patient pale and exhausted by his long illness, with cough, irregular fever, clammy sweats, and lost appetite, become free from fever and sweats, and regain his appetite, color, and strength after having properly drained a long pent-up empyema. That operation is, therefore, indicated which will give the freest exit to the purulent collection. Küster employs the following method: Following exploratory puncture, an incision is made in the fourth or fifth interspace, anteriorly; a silver sound is introduced through the opening and carried to the deepest part of the pleural sac, posteriorly. The point of the sound is pressed against the chest-wall until it can be felt in an intercostal space, when the rib above is resected. A long drainage-tube is passed through both openings, and the chest-cavity washed with a weak salicylated water.

It is desirable to remove the drainage-tube as soon as can be safely done, in order to secure the healing of the external wound and the expansion of the lung. To promote the latter, during the entire course of treatment and for a considerable period thereafter pulmonary gymnastics should be systematically carried out. This may be conveniently done by making forcible straining efforts, whereby the air in the healthy lung is forced into and expands its fellow. The same object is very well accomplished by having the patient force water by expiratory efforts from one bottle to another, the bottles being arranged after the manner of Wolff's bottle.

Küster's plan is probably unnecessarily heroic, although, if the patient's strength were not too far exhausted, no harm would come

from the second opening. This plan has not been adopted, however, in the cases recorded, but care has always been taken to establish the freest drainage. The operation is equally indicated in both extremes of life and the presence of fever is not a contraindication.

The question of irrigating the pleural cavity after the operation has been the subject of much discussion. It has been our practice to irrigate the pleura until the fluid came away clear; no harm has seemed to us to follow this procedure. Cases are recorded, however, in which sudden collapse or convulsions have occurred during the irrigation. Bowditch strongly objects to irrigation in empyema: first, because it is unnecessary, in his opinion; and, second, because it is not free from danger. He says that he has only once thought it necessary to irrigate in three hundred and ninety-nine operations. De Cérenville, Runeberg, Robertson, Basel, and Bonberet hold the same opinion.

The following technique for resection of the ribs seems to us to best meet the indications:

1. The portion of the rib selected for removal should be that between its angle and sternal attachment. Posterior to this it is more immovable and situated so closely to the adjoining ribs that the difficulties of the operation are greatly increased.
2. Those ribs between the third and the tenth should be selected which most accurately overlie the cavity.
3. The number of ribs operated upon should be proportionate to the extent of the cavity.
4. The length of the pieces excised should be proportionate to the depth of the cavity.
5. The operation should be done aseptically and subperiosteally, and when so performed is almost without danger; and even in cases where large portions of ribs are removed is followed by no permanent loss of function in the external respiratory muscles of that side.

It should be unnecessary at this time to insist upon the usual antiseptic details employed in modern surgery. Without this precaution the character of the discharge is apt to be unfavorably influenced by the entrance of other micro-organisms than those already present.

The ribs may be exposed by an incision parallel with and upon the rib, but it is less satisfactory than the method of making a curved incision exposing the portion of rib to be excised. This incision is the more desirable when portions of two or more ribs are to be removed, as it obviates the necessity of making multiple incisions. The periosteum is to be separated from the rib by the ordinary ele-

vator, and by keeping the latter close to the under surface of the rib the intercostal artery may be separated with the periosteum and thus escape injury.

Free drainage is best obtained by introducing the ordinary pure rubber drainage-tube, which should, however, be of ample size. Some method must be employed to prevent the escape of the tube in the pleural cavity, where its subsequent detection and removal would be difficult, while the presence of the tube in the chest would keep up the very condition which its original employment was intended to relieve. A satisfactory method for retaining the tube is to stitch it to the margin of the wound. Another method consists in using a flat disk of hard rubber, with a hole in the centre corresponding in size with the calibre of the rubber tube, one end of which may be split into three or four portions, which are to be stitched to holes in the disk. The drainage-tube should be covered over with a liberal dressing of iodoform gauze or other antiseptic material. The subsequent treatment should consist in changing the dressing as frequently as necessary, and where there are no contraindications we believe it desirable to irrigate the cavity at each dressing. For this purpose a saturated solution of boric acid is perhaps the best. If the fluid is of a pronounced purulent character, the use of hydrogen peroxide in full strength or diluted will be beneficial. It should not be employed, however, if the opening in the chest is not large enough to give free exit to the gas which is formed, otherwise it is possible that a sufficient degree of pressure might be caused to interfere somewhat with respiration and circulation.

Attention should also be given to the general health of the patient. A sufficient quantity of easily-digested food should be administered. The hypophosphites, cod-liver oil, iron, and arsenic may one or more be indicated. An out-of-door atmosphere and the direct rays of the sun are also important.

The question of the removal of the tube is frequently difficult to decide; the general rule is, however, to gradually shorten it as the cavity contracts.

The only contraindications to costal resection would appear to be advanced pulmonary phthisis or an empyema complicating a general pyæmic state.

Age has no bearing on the indications of the operation. Cases are reported which have been successfully operated upon in the first year of life, and the same is true of advanced years; in both instances the presence of retained pus

is a more serious condition than the effects of the operation.

The following cases have been selected from those occurring in Dr. White's practice:

**CASE I.—*Empyema; Incision; Imperfect Drainage; Resection of One Inch of the Fifth and Sixth Ribs; Recovery.***—C. M., aged fifty-three years, farmer, gave the following history: Eighteen months previously, following the influenza, the patient had pleuro-pneumonia, which confined him to bed for three months. During this time and for about a year subsequently he had persistent loose cough with considerable expectoration. About a year after the beginning of the present illness the patient complained of pain on the right side on coughing, and soon afterwards an abscess appeared between the seventh and eighth ribs of that side. This was incised and a large quantity of pus evacuated, with almost complete relief of the cough. The discharge continued to be quite free, and during the past few weeks the cough has again increased in severity. The patient has lost fifteen or twenty pounds in the past year. Nothing in the family history had any bearing in the case. The patient had never been strong.

As there was evidently imperfect drainage, it was decided to resect portions of the fifth and sixth ribs in the anterior axillary line. For this purpose a horseshoe-shaped incision, with the base upward, was made, exposing these two ribs, and about one inch of each was removed subperiosteally. On incising the pleura, about a pint of pus was evacuated. The cavity was freely washed out with warm boric-acid solution, a large drainage-tube introduced and secured by stitching to the skin incision, the margins of which were approximated, and a liberal antiseptic dressing was applied. During the next week the cavity was syringed out three times daily with warm boric-acid solution. The patient was up in a chair on the sixth day, and walking about on the eighth day. There was at this time very little discharge, the cavity being now irrigated but once daily. The cavity gradually contracted, the patient's health improved, and by the seventeenth day the chest would hold but two-fifths as much as it did immediately after operation. In this condition the patient returned to his home under the care of his physician.

**CASE II.—*Empyema; Costal Resection; Recovery.***—V. E., aged twenty-five years, came to the hospital on account of pain in the right side of the chest, and dyspnoea. There was nothing in the family history or in the personal history of the patient which had any bearing

on the present illness. The first symptom was noticed a year ago, with pain in the right chest, dyspnoea, and cough. Inspection showed the right chest to be distended and motionless and the intercostal spaces bulging; as drugs failed to reduce the effusion, the chest was aspirated eleven times; at first the fluid was clear, but at the fifth aspiration it was turbid, and at the subsequent tapplings was distinctly purulent. During all this time the patient had fever of an irregular type, cough, and dyspnoea; he was confined to bed much of the time, but was usually able to get about for a short time after each tapping. In this condition he was brought for operation. Upon inspection the right side of the chest was seen to be bulging, the intercostal spaces obliterated, and there was a tendency to pointing in the seventh interspace in the mid-axillary line. Percussion gave a flat note and the overlying skin was oedematous.

A curved incision with the base upward and the lower part corresponding with the seventh interspace was made in the axillary line and an inch and a half of the seventh rib was resected subperiosteally. About one hundred ounces of purulent fluid were evacuated. The cavity was irrigated with sublimate solution (1 to 20,000), a large drainage-tube inserted, and the wound closed with sutures; a liberal dressing of antiseptic gauze was applied. On the fourth day the patient was allowed to sit up, the appetite was good, strength improved, and recovery was in every way satisfactory.

**CASE III.—*Empyema; Estlander's Operation; Recovery.***—F. S., aged twenty years, came to the hospital on account of an old empyema which had lasted four years. The patient suffered from an attack of pneumonia twelve years ago, from which he had evidently entirely recovered. Four years ago he had a second attack of pneumonia, following which empyema developed. The chest was aspirated and a large quantity of purulent fluid was withdrawn; the collection rapidly reformed, and a second aspiration was performed. As the fluid reaccumulated a small drainage-tube was introduced and allowed to remain for five or six weeks. At the end of this time it was withdrawn and the external opening closed. It was necessary a year later to reopen the wound and introduce another drainage-tube; this tube disappeared, and it was thought entered the pleural cavity. Another tube was put in its place, which had been retained up to the time he came under Dr. White's care; a constant discharge had kept up. It was decided to perform Estlander's operation in order to secure the heal-

ing of the cavity. Portions of the sixth, seventh, eighth, and ninth ribs were resected. A careful search for the missing tube with the finger failed to disclose it; the cavity was then irrigated with sublimate solution (1 to 20,000) and packed with strips of iodoform gauze; the wound was then covered by a thick dressing of antiseptic gauze. The patient bore the operation well. The packing was removed on the second day after the operation. There was a large collection of fetid pus, and with this a portion of drainage-tube six inches in length was discharged. This was curled up in a round mass and held in this position by lymph. The tube had probably been encapsulated, and the packing had caused this to break down, which resulted in the discharge of the tube. The convalescence of the patient was rapid and satisfactory. The lung gradually expanded, and at the end of two weeks had nearly filled the cavity of the chest on that side. At the end of a month the cavity was so small that a tube could no longer be introduced, and the second incision was, therefore, kept open by a tent of iodoform gauze; the patient at this time was going out every day. A week later he was discharged, having entirely regained his health and the wound completely healed to the level of the surface, and requiring but a few more days for cicatrization.

CASE IV.—*Empyema; Estlander's Operation; Recovery.*—F. M., aged thirty-three years, was suffering from a large empyema which filled the whole left side of the chest, for which it was decided to resect portions of the fifth, sixth, and seventh ribs, which was done through a large horseshoe-shaped flap. Two inches were removed from the fifth rib, two and a half inches from the sixth rib, and three inches from the seventh rib. The subsequent treatment was the same as in the other cases. The health and strength of the patient rapidly improved and the cavity diminished in size; but, owing to the impossibility of control of the patient, a sinus persisted, which, however, did not interfere in any way with the usual occupation. Death occurred two and a half years later from an acute intestinal affection.

CASE V.—*Empyema; Costal Resection; Recovery.*—R. S., aged twenty-one years, was suffering from a large empyema which had followed a pneumonia. After it was found that the medicinal treatment would not induce the absorption of the fluid, the chest was aspirated. The accumulation rapidly recurred, and as the condition of the patient was becoming one of hectic, the necessity for securing free drainage was imperative. To secure this it was deemed

necessary to remove portions of the sixth and seventh ribs. A large quantity of fluid was evacuated, and free drainage established by means of the rubber tube. The improvement in the general condition of the patient was immediate and progressive. The task of transferring water from one bottle to another by means of blowing through a tube which perforated a cork accurately adjusted to the mouth of the bottle was begun early; the drainage-tube was removed in the fourth week, when a small tent of iodoform gauze was used in the external opening until the cavity became obliterated.

### THE UTILITY OF AMPUTATIONS NEAR THE ANKLE.

CASES EXHIBITED AT THE MEETING OF THE PENNSYLVANIA  
STATE MEDICAL SOCIETY AT PHILADELPHIA,  
MAY 16, 1894.

BY GWILYM G. DAVIS, M.D., M.R.C.S.,  
Surgeon to the German and St. Joseph's Hospitals.

IN 1889, before the Philadelphia County Medical Society, Dr. Mordecai Price, of this city, advocated the abandonment of all amputations near the ankle-joint, and substituting therefor amputation below the knee.

In his address on surgery before this Society in 1891, Dr. Allis also advocated the same procedure.

In 1892, Dr. Price again brought up the subject, and now at this meeting he once more presents a paper advocating the same procedure.

These gentlemen are not alone.

Dr. Buntz (*Medical News* February, 1894), Professor of Surgery in the Wooster University, Cleveland, Ohio, has lately written in the same strain, as has also Mr. Truax, an instrument-maker of Chicago.

Dr. Mordecai Price has been most outspoken and it was on account of his proposing again to read a paper on the subject before this meeting that I was induced to collect some cases which it was thought might throw some light on it. I have simply gathered such as I could without any intention of showing extraordinary results.

The continuous onslaught which has been made on amputations through the foot and lower part of the leg is producing its effect on some surgeons and causing them more often to amputate at the higher point.

The objections alleged against them are:

1. The uncertainty of obtaining useful stumps.
2. That the mechanical appliances are awkward and unsatisfactory.

3. Reamputations are necessary before an artificial limb can be worn.

4. That the disfigurement is so great that it produces a bad effect on the mind and *morale* of the patient.

I had collected ten cases, which it was proposed showing; five were Chopart and five were Pirogoff amputations. Three of the cases were operated on late last summer and last fall. One was a double amputation, one operation being at the seat of election on the leg and the other a Pirogoff; another case was a Chopart, and the third a Pirogoff.

Two cases illustrated the usefulness of the Chopart amputation even when no apparatus was worn. One patient, whom I now show you, had a Chopart amputation performed thirteen years ago, since which time he has worn a shoe made by an ordinary country shoemaker. He is fifty-two years of age, and has never had the slightest trouble with his foot, nor been compelled to lay up a single day on account of it. He is a lumberman by trade, and has been employed continuously at hard laboring work.

The other case—which has disappointed me—is a boy aged seventeen years, on whom I did a Chopart amputation eight months ago. Healing occurred by primary union, and he walked almost immediately, and has since used a common shoe. He has a very slight limp and can walk as fast as he ever did. He is an extremely bad character, and is now what he terms “on the bum,”—that is, he is a professional tramp. What better use could these two cases have had of their limbs if the amputation had been done below the knee?

Three other cases were intended to show the utility of an artificial foot in Chopart amputations. One was a wealthy business-man, whom I was unable to induce to come. He has worn with satisfaction an artificial foot for years. A second is a gate-tender on a railroad, and he has failed to appear. He also wears an apparatus, and is on and off his feet all day and walks very well. The third, the gentleman I now show you, walks, as you see, with almost no limp, and on looking at his feet as he walks it is absolutely impossible to tell which is the affected foot; it is only when his pantaloons are raised sufficiently to see the lacings around the ankle and leg that anything unusual is to be observed. In what way the condition of either of these three cases would be improved by an amputation through the leg, I am utterly unable to see. This last case was one of Dr. John B. Deaver's, my colleague at the German Hospital, and he is wearing an appli-

ance made by D. W. Kolbe & Son, of this city.

I had five cases of Pirogoff amputations, two of whom are present. Two were intended to illustrate the usefulness of the limb when no special apparatus is worn. One is a boy aged sixteen, who is walking around in a small circular leather boot, laced on the stump two or three inches above the ankle, and resting his whole weight on the extremity of the stump on a pad placed in the boot; he has absolutely no pain. The second is a man who is out of work, and is wearing a home-made device until he is able to pay for the apparatus which I here show you. It was made by D. W. Kolbe & Son, and has a socket below for the stump and leather above, which is laced around the calf; it has an ankle-joint and toe-joint. This man has already worn an apparatus like this with perfect satisfaction, and now the one I show is a new one, which has just been completed. A third case I missed owing to not keeping an appointment I had with him. He stopped in at the instrument-maker's, and had his apparatus, similar to the one shown you, put in perfect order, and departed forthwith to Massillon, Ohio, where he joined Coxey's army on its tramp towards Washington. What better evidence could there be of the usefulness both of the operation and the apparatus?

Of the remaining two cases I here show, the first was done by Dr. Deaver at the German Hospital about two years ago. He is a watchman in a large station. He wears an apparatus, and walks, as you see, with a slight limp. He says at times it is not at all noticeable, as it depends on how he feels, and especially as to how the apparatus is laced on. If it is laced firm and straight, then he walks without limping, but if it is loose or slightly twisted, then he limps slightly. Although the amputation was done over two years ago, he has never lost any time, and is positive in his preference of a Pirogoff to an amputation through the leg. He has come in contact with others who have lost their legs by an amputation below the knee, and he thinks they have more pain and discomfort and loss of time than he has had. He patrols a building over a hundred yards long (one square), going completely over it every hour.

The last case is one of double amputation for railroad crush, which I performed last September at the German Hospital. One leg is amputated below the knee and the other is a Pirogoff amputation. He has been wearing the legs only one month, and has not yet gotten thoroughly used to them, and therefore uses a

cane. As is seen, he walks well for one in his condition, and on looking at the feet there is absolutely no visible difference between them. One apparatus looks just as well as the other. On asking him which limb he prefers, he says the one on which the Pirogoff amputation through the foot was performed. The reason is that he feels more secure on it and has greater control over it than over the other. It also feels better, because there is no lacing around the thigh to constrict and chafe him. When standing on his leg amputation, he has to be careful to keep it stiff, or he is apt to lose his balance, while with his foot amputation there is no such tendency. The reason of this is easily seen when we consider the point of support in the former case is eighteen or more inches from the ground, while in the Pirogoff it is only two or three. This case I certainly think is a fair test of the value of the two procedures. The patient is a man of two hundred and twenty pounds weight, and has had experience with both methods, and you have heard him state his preference for the Pirogoff or foot amputation.

It is not claimed that these few cases will settle the question as to which position it is more desirable to amputate, but a constant following of hospital surgical practice for the past fifteen years has failed to convince me that there is any reason sufficient to justify a resort to amputation at the seat of election below the knee when there is sufficient tissue left to perform a proper Chopart or Pirogoff amputation, and this whether, as in two of the cases shown, the patients are in the humbler walks of life, or whether, as in the other two, they are in more affluent circumstances.

Dr. McCurdy, of Dennison, Ohio, has recently stated that he has excellent results from Syme's amputation, and prefers it to the Pirogoff. Of this I have as yet formed no opinion, but I know I can get good results from the Pirogoff, both as regards the use of the limb and as regards cosmetic effects. In performing it, however, as much of the lower ends of the leg bones and as much of the calcaneum as possible should be removed, so that the limb will be shortened enough to enable the instrument-maker to make use of a cylindrical joint beneath the stump and prevent the tension on the tendo Achillis from drawing the fragment attached to it out of place before it has properly united to the tibia. Even if, as Truax asserts, the percentage of those unable to wear artificial appliances in amputations of the leg and foot is as four to fourteen, I still think that the ten per cent. difference does not justify a resort to the higher amputation. When in amputations an

end-bearing stump can be secured, as in these cases, then I believe it ought to be chosen, because, if it be desired, the support derived from lacing the limb above can still be used and the weight shifted from one place to the other at the will of the patient. Satisfactory appliances for these amputations can be secured, which do aid in walking and in rendering the deformity less noticeable.

255 SOUTH SIXTEENTH STREET.

### AMPUTATIONS AND MECHANICAL RESTORATIONS.

BY EDWIN OSBORNE, M.D., PHILADELPHIA, PA.

THE interests of surgery and of the appliances that promote the success of its operations, in the artificial restoration of the lost parts of the human body, are so entirely identical that a few words on the requirements of the latter seem particularly appropriate in a journal of this kind.

The inquiry is often made as to the best point of amputation for the perfect adaptation of the artificial leg.

The choice is not always in the surgeon's hands. In olden times it was customary to amputate, when the injury was below the knee, at the upper third of the leg, with the view of flexing the knee-joint and resting the weight of the body on the knee on the then generally used peg leg. If the injury was at or near the knee, then, when possible, at the lower third of the femur, as giving the best stump or one most easily fitted to the conical socket which would support the necessary pressure on the walls of the stump in walking. In these days, however, the peg leg is rarely seen, and the mutilation is not so palpably advertised. With the advances in the art of constructing artificial legs, new ideas in surgery prevail.

The writer's experience of over forty years in the adaptation of artificial legs to thousands of amputations of every conceivable kind warrants him in thinking that his views may be of interest to the surgeon who, in the exercise of his great calling, has the future comfort of his patient in mind as well as his present relief.

It is certainly safe to say that one cannot have too much of the natural leg. It is the lever that controls the artificial part, and the longer the lever the better the walking results.

Very long stumps are much more difficult to treat, but in competent hands the mechanism can always be skilfully adapted to the amputation. The welfare of the patient is the first



consideration, rather than the convenience of the leg-maker. In the application of the artificial leg the weight of the body must be supported about the amputated leg, consequently anything that facilitates its comfortable adaptation is a great boon to the patient. In all amputations an abundant flap is a great help, for the reason that in taking the pressure about the stump there is more or less tension of the flesh over the end, and if the flap is meagre irritation is likely to follow. It has been the writer's practice for many years, in all cases when practicable, to support some weight on the end of the stump. In many cases, upon a suitable rest, a very considerable pressure can be borne with positive comfort. It relieves the side pressure and the wedging sensation of the support in the tapering socket.

Any amputation that admits of what may be called a natural base of support possesses great advantages. The Chopart operation, where alone the heel is retained, gives a perfect support. The treatment is difficult because of the extreme length, but by practically lengthening the sound leg by means of a higher heel on the shoe, a good result is attainable. The Pirogoff also admits of a perfect support and has this important advantage, it shortens the leg considerably, thus giving ample room for the foot and its mechanism. The Syme operation gives equal advantages.

When necessary to amputate above the ankle, save all that can be saved; for although a very long stump is more difficult of fitting, still, the benefits counterbalance the difficulties. In amputations below the knee it is desirable to have the fibula somewhat shorter than the tibia; it makes a rounder end to the stump, and one very much less sensitive to pressure.

A stump of less than two and a half or three inches in length, reckoning from the lower edge of the patella, is rather too short for the comfortable use of the natural knee, but it can be flexed and the weight borne on the knee, making the knee-bearing leg the most comfortable of all the artificial legs.

Save the knee-joint always when possible, for no matter how short the stump may be flexed, it gives the best possible support and the longest thigh leverage for the control of the artificial knee-joint and leg. When the knee cannot be saved, then the amputation through the joint is the next best.

This amputation has not generally met with much favor from leg-makers, because it requires the highest skill in its treatment. When it is simply disarticulated, covered with a meagre flap, with condyles prominent and patella

slipped a couple of inches from the end, it is about the most trying case one can encounter. But if a considerable portion of the condyles is removed and the patella made to adhere to the end, rounding the stump and protecting the remaining condyles, then, with a good flap, it is an operation of great merit. It gives an excellent base of support, and, though still difficult, can be admirably treated. Above this point, of course, save everything possible.

#### THE USE OF STRYCHNINE IN SNAKE-BITE.

BY DR. MACHER, YARKANDANDAH, VICTORIA,  
TRANSLATED BY  
H. H. BEHR, M.D., BERKELEY, CAL.

BY the request of Baron von Müller, I have the pleasure to communicate to you a complete exposition of my theory and treatment of poisonous snake-bites. From the beginning our mutual friend recognized the importance of my investigations in this matter, and endorsed my statements when they were ignored by other scientists. He also secured for me the honor of the discovery when afterwards the results of my method became generally known. As an introduction, I say a few words about the history of my discovery.

I have now been thirty-five years in Australia, and snakes always had for me a peculiar kind of interest, because, in the very beginning of my medical career in Australia, I almost succumbed to the bite of a tiger-snake (*Hoplocephalus curtus*). As a natural consequence of this accident, I read up the literature on this subject, but derived from this material so little satisfaction that I made up my mind to restrict myself entirely to my own experiences. I had ample opportunities to do so. I like the free life in the "bush" and am a passionate hunter. So I came in frequent contact with my interesting friends, and witnessed the effects of their insidious weapon on men as well as on most domesticated animals.

I soon observed that most of the symptoms could be reduced to functional disturbances of the nervous centres, but for many years I pondered over the question, Are these disturbances direct and primary, or are they produced by decomposition of the blood, occurring at the same time? My own sensations, especially the development of these sensations immediately after the bite, caused me to consider the disturbances of the nervous system to be primary. There was less difficulty in settling the question, Does the paralytic effect of the

poison extend contemporaneously to motory and sensory nerve-cells? My observations lead me to consider the motory cells to be first affected and after them the sensory cells. Some of my hunting-dogs which were bitten on different occasions still showed sensations in the hind legs when they would no longer respond. In the same way, patients of mine who had been bitten without being conscious of it, noticed their state only when they were not able to walk. This symptom had been the first in my own case also; so it was not difficult for me to localize the effects of the poison primarily in the anterior column of the spinal marrow. It was clear, too, that the symptoms, ascending from that point, spread over the entire motory sphere and reached the gray substance of the cortex cerebri. A careful analysis of the symptoms, which with us in all dangerous cases culminate in coma and loss of sensation, supported this theory. The weak action of the heart and the diminution of blood-pressure, fainting, præcordial anxiety, etc., indicated at the same time debility of the vaso-motor centres.

But now, what caused the swelling, extravasations, sloughing in the bitten part, the destruction of the blood-corpuscles, and the dark, not coagulable, quality of the blood?

If my theory were correct, it had to explain these symptoms also.

Unfortunately, science knows little about the consequence of a paralysis of the vaso-motors. At the same time the circumstance escaped my memory during these studies that there exist diminutive ganglia at the ends of vaso-motoric nerves, which evidently regulate the circulation in the capillary system.

These doubts brought it about that years passed by before I ventured to publish my theory. The phantom of blood-poisoning always appeared before my eyes whenever I seriously thought to give my theory to the public or prove it by practical application.

If my theory were correct, strychnine, beyond doubt, was the physiological antidote.

At length, in 1887, I was compelled, in an apparently hopeless case of poisonous snake-bite, to try it. From a long and painful experience I knew my perfect helplessness with regard to the usual antidotes,—ammonium, permanganate of potassium, and alcohol. My patient, a boy of fifteen, was cold, without pulse, and comatose. He had to die at any rate. I therefore resolved upon a daring and energetic application of the theoretical antidote, as I reasoned that it finally amounted to the same thing if the boy died by strychnine

or by snake-poison. There was *periculum in mora*, and so I injected subcutaneously in a short space of time as much as  $\frac{1}{3}$  grain. The result was a brilliant triumph of science, to witness which it was worth while to have lived.

The pulse returned, the face lost its deadly pallor, the patient, before motionless, began to move and to sigh. Another injection of  $\frac{1}{4}$  grain, and he threw himself about as in sleep.

Then I seized him by both shoulders, and, shaking him violently, I called him by name. He opened his eyes, rubbed them like one being awakened from heavy sleep, and looked with astonishment at the persons present. He was in his perfect senses, and in less than an hour he sat at my table eating and drinking, as if nothing had happened.

So the mystery of snake-poison was solved and the correctness of my theory entirely proved.

I was perfectly happy, and kept the boy for several hours under my observation, because the pallor did not yield entirely and the reaction of the pupils of his eyes was but tardy. I administered a full dose of alcohol, but without apparent effect. I did not risk to go beyond  $\frac{1}{3}$  grain of the antidote, notwithstanding the absence of the slightest twitching of the muscles. His state of health did not change, and so I yielded finally to his entreaties to let him go home. Nevertheless, I gave positive instructions to his mother not to allow him to fall asleep, and to call me immediately as soon as any change in his state should take place. But the mother, an ignorant Irishwoman, unfortunately allowed herself to fall asleep; the boy, too, fell asleep, and during his sleep was seized with coma. When the mother discovered it in the morning, she sent for me immediately; but this time the boy died before my arrival. Later experiences have demonstrated that a single injection would have been sufficient to neutralize the remaining power of the poison and would have saved the boy. Since then I made it my rule to continue the injections until the development of slight muscular twitchings; but even then I do not allow the patient to sleep during the first night, and I am now perfectly master of the poison. The poison frequently causes récidives in violent cases, which always have to be conquered by strychnine. The quantity needed for this purpose need not be considered, because the antagonism of the two poisons is so perfect that the specific symptoms of strychnine do not develop before the lethargy and paralysis of the nerve-cells and the influence of snake-poison have been perfectly conquered. In a few cases

I have witnessed tetanic spasms, but they passed quickly, without doing any harm.

This treatment is so simple that it has been successfully administered by intelligent people who were without any medical education.

In bad cases we inject 16 minims of the liquor strychn. (P. B.), and if the patient, after the injection, does not visibly improve, we repeat the same injection after fifteen minutes; then we continue with injections of 8 minims about every fifteen minutes until all the symptoms have disappeared, or until the strychnine begins to develop its physiological effects.

There are many cases when even smaller doses of the antidote have proved to be efficient. In the worst cases  $\frac{1}{4}$  to  $\frac{1}{2}$  grain have been necessary.

At present no sensible medical man doubts any longer the correctness of my method, and public opinion is so outspoken in my favor that a fatal case of snake-bite treated by any other method probably would have as a consequence the trial and punishment of the implicated medical man. There is no doubt that the value of the discovery will be recognized in other parts of the world as well, because snake-poison everywhere attacks the same organ, however different the symptoms may appear at first sight. Paresis and paralysis of the motoric centres is always evident, the only difference being a certain predilection for certain spheres,—viz., the poison of the cobra (*naja*) having a predilection for the respiratory centres, the glosso-pharyngeus, etc.; the poison of the viper (*Vipera Russelii*) for the vaso-motoric centres, etc.

Fayrer, Richards, Mitchell, and others pretend that the poison of the viperinæ is a pure blood-poison, and essentially different from the poison of the elapidæ; but this theory has been fundamentally refuted by the fact that poisoning by the deaf adder (*Acanthophis antarcticus*) is as speedily cured by strychnine as the bite of our deadly pseudedis, predonaja, hoplocephalus, etc., without any remaining symptoms of blood-poisoning.

The theory is very simple; but this very simplicity, in contrast with the predominating confusion of ideas, may have been one of the reasons why some of our professors were so slow in adopting my theory.

The great Kobert mentioned it rather unfavorably in *Schmidt's Jahrbücher*, until, finally conquered by undeniable facts, he was compelled to recognize my merit, but he did so with the remark that there was not anything so remarkable in the discovery, the poison of our snakes being analogous to the effects of

chloral, and strychnine being recommended in overdoses of chloral.

The publication in 1887 of my theory was rather disagreeable for Kobert, because he had experimented for many years with the poison of snakes and spiders, and had arrived at the same conclusions which I published. Feo Klistow communicated, in a dissertation written with the co-operation of Kobert, the results of more than two hundred experiments, which proved the correctness of my theory as to the most minute details. It was a happy circumstance that this essay was not published before the year 1888. Both scientists experimented, like me, with strychnine, but committed the error of generalizing from unsuccessful experiments with lower animals. Feo Klistow, at the end of his essay, pronounces the opinion that in the present state of science a physiological antidote against snake-poison could not even be thought of. He had no idea that at the time he was writing those lines such an antidote was discovered and already in common use at the antipodes.

You will find in the manuscript which I send you many authenticated cases to prove to your American countrymen the correctness of this important discovery, so that it will gain ground and benefit a distant country.

The following notes of three cases of snake-bite treated by subcutaneous injections of strychnine, by H. C. Garde, F.R.C.S., surgeon to the Maryborough Hospital, Queensland, are taken from the *Australasian Medical Gazette* of April, 1890:

CASE I.—At about 7 A.M. on January 26, Miss H., aged thirteen years, was bitten on the outer side of the right ankle by a large brown snake. Within a minute or two a small-sized rope was wound around the leg from the ankle to above the calf, and she started on horseback for town, having to come six miles, and, being delayed in crossing the river Mary, in flood state, she did not arrive at the hospital until 9 A.M. She was then in a nervous and exhausted condition, and had some dragging of the lower limbs on trying to walk. The two punctures were plainly visible. Free incisions were made across them, and the foot placed in warm water; the parts, being congested, bled freely; pressure converging towards the wound was made to increase the flow. Next, 15 minims of the liq. strychninæ (P. B.) were injected into the subcutaneous tissues of the thigh, and five minutes afterwards the ligature was removed. As she looked like fainting, an ounce of whiskey in a little cold water was given. Ten minutes later 10 more drops of liq. strychninæ were

injected, and by 1 P.M. she felt well enough to return home.

**CASE II.**—On January 28 a Kanaka, aged about twenty-two years, was brought in from Jindah Plantation. He was bitten by a snake just above the ankle, and a ligature was applied at once just above the punctures and another one about three inches farther up the leg. He was unable to tell what kind of a snake had bitten him, not being able to speak English. With the exception of his not getting any whiskey, similar treatment was adopted, and he got all right in a couple of hours.

**CASE III.**—On February 26, W. O., aged sixteen years, was bitten by a whip-snake on the ankle. He at once tied his belt tightly around the leg above the wound. He was brought into town about an hour afterwards. The symptoms were slight,—indeed, might fairly be ascribed to fright; only one injection of 12 minims of liq. strychniæ was used; wound treated same as other two cases.

*Remarks.*—In all the cases the bites were situated in nearly the same position, and as none of the patients had on boots or socks, the fangs were applied to the skin direct. The brown snake is looked upon by good authorities as being the most poisonous of all the Queensland snakes. Mr. Johnstone, postmaster of this town, who has lived for over twenty years in the northern parts of this colony, and who has had considerable experience with snakes, tells me that he saw twelve people who had been bitten by brown snakes, and, as he expressed it, he "attended the funerals of the lot," while of seven cases of bites by the deaf adder four are alive at present. He had the misfortune to have been bitten himself some six months ago by a brown snake, and was treated by Dr. Bowe, of Gympie, at first with injection of liq. ammonia and afterwards with liq. strychniæ, to the latter of which he ascribes his recovery. I may say that his case was worse than any of the three treated by me, as he became quite insensible and had, in addition, to have artificial respiration carried on for a considerable time. He informs me that the whip-snake is not poisonous; at any rate, Case III. did not exhibit any symptoms that could not be accounted for by fright, so that he probably would have recovered whether or no.

*Strychnine in Snake-Bite* (from the *Australasian Medical Gazette*, April, 1891).—Through the courtesy of Dr. F. N. Manning, medical adviser to the New South Wales government, we have received a first batch of official police reports on cases of snake-bite, collected by direction of the honorable colonial secretary,

from which we have extracted those cases treated with Dr. Müller's remedy, not yet reported elsewhere:

On March 10, 1891, the officer in charge of police at Murrurrundi, reports that a case of snake-bite, partially comatose, was treated by the local chemist, who injected liq. strychniæ hypodermically, and applied acid. carbolic. and liq. ammon. locally. The patient recovered.

On March 19 the officer in charge of police at Glen Innes reports the death of a woman, aged sixty, from snake-bite. *The injection of strychnine was not used*, but, he says, "everything was done to support the failing nervous system and to stimulate the heart by injections of ether, and strength was supported by alcohol, ammonia, etc.; permanganate of potassium was used locally."

On March 12, 1891, the officer in charge of police at Armidale reports that six cases of snake-bite have been treated in that district by the hypodermic injection of strychnine, of which five resulted in cure; the sixth, not having been attended to until four hours after being bitten, died.

On March 22 the officer in charge of police at Inverell reports that two cases of snake-bite were treated by Dr. Vallée, who injected strychnine hypodermically. Both made a good recovery.

We are informed that Dr. Lilie, of Moree, treated two cases of snake-bite successfully by the injection of liq. strychniæ, and Dr. L. S. Holmes, of Lannceston, also treated a case with Dr. Müller's remedy, full reports of which we hope to publish in a future issue of this journal.

The discovery of this important antidote shares the fate of all discoveries. It is at first treated with doubt and contempt, and when the fact cannot any longer be maltreated, the old comedy of the egg of Columbus is created in a new version. It is rather tedious to look at the petty jealousies which hang round every discovery. We prefer to discuss some peculiarities of the antidote and the poison of which it is an antidote, and we now point out certain rules regarding the administration of such a dangerous antidote.

The very complete casuistics contained in the medical periodicals of Australia prove four things.

1. The strychnine acts regularly and promptly.
2. Its action stops entirely after a time.
3. The snake-poison, like the poison of fungi, of fishes, and mussels, develops irregularly.
4. It sometimes remains latent for a consid-

erable time in the system, so that when it has apparently been conquered for several hours, it suddenly may start a new course of symptoms. This tendency to remain latent in the system, which it shares with many ptomaine poisons, is probably the cause of the irregularity and slowness of its development, of which I have heard in Surabaya of a very striking instance in the case of a Dutch captain bitten by a hydrophis while bathing.

I therefore would recommend not to inject the antidote before unmistakable symptoms of the snake-poison are perceptible, as the poison may act so slowly that the patient succumbs to the strychnine before the state which requires and neutralizes its action has developed.

Secondly, to watch the patient even after the disappearance of the last symptoms for another twenty-four hours, in order to be able to combat in time that insidious sudden revival of the snake-poison to which succumbed the first-mentioned patient.

After having established the fact that strychnine is the physiological antidote of snake-poison, there rises naturally the question, Is snake-poison the physiological antidote of strychnine? Theoretically we can answer the question by "yes," but practically we have to consider the great irregularity with regard to time and intensity of the action of snake-poison.

In the administration of strychnine we can measure the dose to a nicety (a few cases of idiosyncrasy, of course, excepted), but snake-poison is unreliable and treacherous in every sense, as to time as well as to intensity. It is not only the state of the snake from which it is taken that must be taken into consideration, it is also the individual to whom it might be administered. There are few agents in which idiosyncrasy plays such a part as in the action of snake-poison. We know a number of mammalia and birds which enjoy a perfect or limited immunity from its deadly action, some species of weasel, the hedgehog, the glandarius, and, to a limited extent, the stork. There may be individuals of our own species who possess an idiosyncrasy that procures for them immunity, and then there is that insidious survival of the symptoms when all danger seems to be over.

Suppose an overdose of strychnine has been treated with snake-poison, is there any certainty that five or ten hours later the fatal action of snake-poison may not begin? There are several other questions arising from this wonderful discovery of Dr. Müller. Other discoveries may spring up, caused by the results of this first investigation, but for the present let us be thankful for the addition to

our knowledge which we owe to this conscientious discoverer.

#### ADDRESS IN OPHTHALMOLOGY: MEDICINAL OCULAR THERAPEUTICS.

DELIVERED AT THE MEETING OF THE MEDICAL SOCIETY OF PENNSYLVANIA, HELD IN PHILADELPHIA, MAY, 1894.

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THE art of restoring health to disordered eyes naturally divides itself into (a) Optical Therapeutics, (b) Surgical Therapeutics, and (c) Medicinal Therapeutics. To recount the achievements in any of these departments constitutes a task worthy of the best efforts of an address in ophthalmology.

The improvements in the shadow-test, so many of which we owe to our fellow-member, Dr. Jackson, the increased accuracy in keratometry with the new model of the Javal ophthalmometer, and the designation of prisms by their angular deviation, together with the numerous useful modifications in their practical application, often the result of American ingenuity and industry, especially by Risley, Randall, Jackson, and Ziegler, are only a few of the many instances on the purely optical side of ophthalmic practice.

The surgery of the eye is always attractive on account of the nicety of its manipulations and brilliancy of its results. A profitable hour could be spent in reviewing the operations for the extraction of cataract in our day, and contrasting the successes under the simple and combined methods, or in discussing the claims of different varieties of capsulotomy and the relation of discission to ultimate visual acuity after the primary section.

Although a spirit of conservatism has marked the treatment of concomitant strabismus, the actual operative manipulations have improved, not only in so far as tenotomies are concerned, but especially in advancements, and we may instance with satisfaction among the numerous excellent methods now employed by ophthalmic surgeons the single suture operation designed and advocated by Prince, of Springfield, Ill.

It is to be regretted that the same conservative spirit has not possessed those surgeons who would have us believe they are able to correct degrees and fractions of degrees of heterophoria by picking out a few delinquent fibres from the centre of the tendon of an ocular muscle. It may be that the so-called graduated tenotomies will some time find a place among the proper

methods of ophthalmic surgery, but the evidence to-day certainly is that a healthy reaction has set against injudicious snipping of orbital tendons in the hope of curing all manner of complaints related and unrelated to muscular asthenopia.

The last year or two has been signalized by the appearance of many papers advocating various measures for the relief of obstruction in the lachrymo-nasal duct.

The free discussion of this particular branch of ophthalmic practice has resulted in a better understanding of the causes of epiphora and a classification of cases, separating those suited to pure operative interference from those which must be managed by constitutional measures, by intranasal treatment, or by local means, unassociated with the passage of instruments through the lachrymo-nasal passages. Among the ingenious methods for overcoming organic stricture mention should be made of the excellent stricturotome of Dr. Charles Hermon Thomas, of this city, and also of the clever substitution of a diseased lachrymal duct with a canula of decalcified bone, which slowly becomes incorporated with the tissues, as has been practised abroad. Finally, we note the relegation to the rear of the old-fashioned excision of the lachrymal gland for malignant epiphora, and in its place the less merciless extirpation of the palpebral portion of this structure, as particularly advocated in the French schools.

How great has been the advance in the management of trachoma! It is true that from the earliest days all manner of surgical procedures, from the most brutal and unscientific manipulations to the daintiest crushings of the granulations, have been practised, but we are particularly indebted to Knapp, as well as those who have modified his forceps, for an instrument with which, in selected cases and with the least damage to the tissues, the cure of this stubborn disease is materially hastened. Gratage and brossage, more violent methods and smacking somewhat of the older and rougher manipulations, no doubt find indications in graver varieties of chronic trachoma, but they cannot be commended with the same degree of confidence that the operation of expression, so performed as to milk the entire conjunctiva of its pathological contents, has gained for itself.

These are but a few of the topics belonging to the surgery of the eye that might be reviewed to show the progress of the last few years. Lest, however, the work of the third department of the art of healing eyes, to which reference has been made, suffer by contrast

with the more brilliant results of pure optical and surgical measures, I crave your attention for a few moments to some observations on *medical and non-surgical ocular therapeutics*, and, first of all, to certain uses and abuses of mercury.

As long ago as 1866 injections of a solution of common salt beneath the conjunctiva were recommended by Rothmund for the purpose of absorbing corneal opacities, and, in 1889, Secondi employed similarly-placed injections of corrosive sublimate in an attempt to cure keratitis, iritis, and choroiditis. It remained for Darier, however, in 1891, to classify carefully the diseases suited to this method of administering mercury, and it is to him and other French surgeons, particularly Valude and Lagrange, that the free trial of this method has been accomplished during the past two years.

Based on the theory that a drug which is believed to be antagonistic to a morbid process should be introduced into the affected organ, and thus come in contact in a concentrated form with the lesions it is intended to antagonize, solutions of soluble salts of mercury, particularly the bichloride and cyanuret, have been subconjunctivally injected, (1) to check the infective processes, as exemplified by sloughing ulcers; (2) to neutralize a syphilitic disease, particularly when this attacks the uveal tract; and (3) to act as an antiplastic or alterative in non-specific and non-infective conditions,—for example, chronic choroiditis.

Recent ophthalmic journals have been liberally supplied with reports from France, America, Germany, Italy, and Russia, and we are in possession of sufficient data to conclude that these injections administered to proper cases are not harmful, and that they often dissipate with marked rapidity the manifestations of acquired syphilis in the iris and ciliary body. Their power in episcleritis, infective keratitis, and choroiditis is not so marked, while in the diseases of the optic nerve and retina and inherited syphilitic affections, especially interstitial keratitis, their effect is still less noticeable.

Conceding a definite value to these injections, it is yet too soon to say whether they will supersede other methods of administering mercury. With respect to this point ophthalmologists are in somewhat the same position as genito-urinary surgeons are with regard to the hypodermic introduction of this drug in the treatment of general syphilis,—a method which has recently found renewed favor in many quarters. Whether an objection urged against the latter practice, and well described by Orville Horwitz, that the results, although quickly bril-

liant, are not stable and that relapses are more frequent, weighs with equal force against these subconjunctival injections of sublimate, will be decided by a wider experience and a greater lapse of time.

In some respects subconjunctival injections are an outcome of a more audacious therapeutic measure, originally proposed and practised by Abadie in 1890,—namely, intraocular injections of corrosive sublimate,—in the hope of checking sympathetic ophthalmitis. Although occasional successes were reported, it will be remembered that the practice was abandoned in favor of the subconjunctival method, even by Abadie himself, on account of its frequent inefficiency and distinct danger. Recently certain experimental inquiries in this country and in Scotland have recalled attention, not only to the introduction of mercury directly into the vitreous chamber, but to the whole subject of intraocular therapeutics. My own experiments on rabbits seemed to show that the vitreous, choroid, and retina withstand badly intraocular injections of various antiseptic substances, with perhaps the exception of aqua chlorinata, although in one dog a suppurative hyalitis was apparently cured by injections of corrosive sublimate into the vitreous. The conclusion was reached that before accepting this method of medication, even within narrow limits, much additional knowledge was needed in regard to the exact therapeutic relation of these fluids, when introduced into the eye, to a microbic disease, and especially the relation of the chemical composition of the vitreous to that of the fluid injected. More promising results are apparent from Dr. Chasseaud's research\* wrought upon exactly the same lines, and the interest in the matter is evidenced by the fact that at the next meeting of the Ophthalmological Congress in Edinburgh a special session devoted to the study of intraocular injections has been arranged. Perhaps the facts then to be brought forward will justify Mr. Berry's belief that these injections represent a distinct advance in ocular therapeutics.

Irrational routine treatment has often been responsible for grave therapeutic mistakes, and in special practice there is no better example than the abuse of mercury in the treatment of many diseases of the eye. No doubt the excellent article of Dr. Landolt† upon this subject is fresh in the minds of many of you. Perfectly willing to pay tribute to the paramount

importance of mercury in the management of the numerous ocular manifestations of syphilis, he protests (and in this protest he has, I am sure, the support of all rational therapeutists) against the needless exhibition of this drug in incurable affections, or in those indicating at the same time other reasonable and efficacious treatment.

Landolt has divided his cases into three classes, which, somewhat modified, I may thus describe:

1. The uselessness of prolonged mercurial courses in case of old atrophy of the optic nerve,—for example, in ataxia,—even if remotely caused by syphilis. The drug cannot restore nervous life to the wasted fibres; it can depress seriously the nutrition of the patient, when this, of all things, should be built up. Who that has looked at a section of an atrophic optic nerve beneath the microscope and seen the delicate nerve-fibrils replaced with coarse connective tissue, will not appreciate the force of the argument.

2. The uselessness of mercury in certain chronic affections of the inner tissues of the eye,—cases in which, as Dr. Landolt aptly expresses it, the ophthalmoscope reveals "the ruin of the choroid and retina,"—for example, pigmentary degeneration of the retina, atrophic choroido-retinitis, and disseminated choroiditis. What power can mercury have, no matter how administered, in re-establishing functions to elements which have undergone chronic cicatricial change, atrophy, and positive destruction?

3. The doubtful value of mercury in non-syphilitic chronic exudative inflammations of the uveal tract,—e.g., irido-cyclitis and irido-choroiditis. In other words, the exact cause of these conditions—rheumatism, gout, depressed nutrition from wasting disorders, abnormal menstruation, or chronic uterine diseases—must be discovered and remedial agents directed according to the findings.

It should be particularly remarked that all this refers to vigorous use of mercury, pushing the drug to the point of tolerance, or even beyond. No one doubts the efficacy of the drug in proper dose, especially the bichloride and biniodide, as an enricher of the hæmoglobin percentage of the blood, as a tonic pure and simple, as an antiplastic, and as possessing the subtle influence which we call alterative. Within these limitations mercury must always remain a potent agent in our hands, especially in the early stages of these troubles,—for example, when an optic nerve is on the stage of cloudy swelling, slight oedema, or passive hyper-

\* *Journal of Pathology and Bacteriology*, November, 1893.

† *British Medical Journal*, March 26, 1892.

æmia, when, as Dr. Norris well expresses it, the nerve-head "sickly."

We now naturally pass to the treatment of optic nerve atrophy, whether it be primary, secondary, or consecutive. Necessarily this depends upon the original cause, and general measures directed to the removal or modification of this meet the most important indications. But have we any new method to offer, or new drug, with perchance a selective influence upon the optic nerve; anything better than strychnine, as originally recommended by Nagel in 1871?

When Charcot revived suspension in the treatment of locomotor ataxia, ophthalmologists and neurologists naturally began to observe whether with improvement in the general condition there was amelioration of concomitant visual deficiency. Galezowski, studying cases of tabetic optic nerve atrophy with reference to this point, found suspension of no value, and concluded that while it might act favorably in the nervous troubles depending upon the spinal cord, it had no influence on the alterations in the higher nerve-centres and the morbid phenomena which result from them. Eulenberg and Mendel, however, reported benefit in one case, and the matter has been referred to by Darier, Abadie, Desnos, and Bernhardt. Recently Bechtereff and Vorolynski,\* experimenting with suspension in the treatment of various nervous diseases, have noted, among other things, its good effect upon visual acuity, especially in tabes. Although the improvement thus far obtained is meagre in quantity and the outlook extremely dubious, the subject is of sufficient importance to invite a more accurate study than has thus far been accorded to it.

If it be true, as De Wecker recently said, that it is easier to joke about injections, after the manner of the late Brown-Séquard, than to refute their indisputable effect, under certain circumstances, the relation they bear to ocular therapeutics is worthy of at least a moment's consideration. For example, Galtier, using the injections of organic liquids in a case of tabetic atrophy of the optic nerve, obtained improvement of the visual acuity amounting to nearly fifty per cent. Bourgon's† results, however, in cases of intracranial, diabetic, and tabetic atrophy, were absolutely negative. Darier, while willing to ascribe to the Séquardian injections an excellent tonic effect, especially in reduced, debilitated, or neurasthenic

organisms, failed to secure with them noteworthy improvement in optic nerve atrophy, and De Wecker, who introduced the subject for discussion in the French Society of Ophthalmology, although satisfied with the inefficacy of this method of therapeutics in the ocular indications of ataxia, recommends them because they increase the strength of the patient. Altogether the weight of evidence is entirely against them, in so far as a special or specific influence upon optic nerve degenerations is concerned.

Antipyrin has recently claimed the attention of the French observers in the treatment of optic nerve atrophy, having been introduced to the notice of the profession by Valude,‡ who believes the drug, by reason of its peripheric vaso-motor action, may have a favorable influence in certain forms of optic nerve atrophy which arise from a vascular change in the connective interstitial tissue which constitutes the stroma of the optic nerve. His dose is 1 gramme of antipyrin to 2 grammes of distilled water, given subcutaneously. A few observations confirming Valude's views have been recorded by other French reporters,—for example, by Bourgon; but it is difficult to appreciate the mechanism of its action under these circumstances, especially when we consider that the same value which is credited to it might readily be obtained by less objectionable remedies.

The excellent results ascribed by Boé to lactate of zinc in one case of sudden failure of vision without ophthalmoscopic change, when other measures failed, can scarcely have been more than a coincidence; indeed, this is the practical conclusion of the committee which investigated the matter.

In the medicinal treatment of optic nerve atrophy—strychnine, phosphorus and its compounds, nitrate of silver, antipyrin, and the alteratives—the probable value of nitro-glycerin should not be forgotten. We are all familiar with the temporary beneficial effect of nitrite of amyl upon the visual acuity of certain types of toxic amblyopia, and hence glonoin, in graver forms of atrophy, when they have not progressed too far, may assist in bringing nourishment to the fibres by its vaso-motor influence.

It would be unbecoming to leave the subject of atrophy of the optic nerve without at least a reference to the use of electricity in this affection. The most rose-colored reports of the value of this agent in the treatment of atrophy of the optic nerve has been described, Dor, for

\* *Annales d'Oculistique*, March, 1893.

† *Ibid*, November, 1893.

‡ *Ibid*, September, 1893.



example, reporting a notable improvement in forty per cent. of his cases. On the other hand, the great majority of careful observers are inclined to agree with the assertion of Noyes, that electricity "has failed to vindicate its pretensions to any real value, although by its capacity for exciting phosphenes, it fosters the hopes of a credulous incurable."

Recently Dr. Charles Eugene Riggs has called attention to the value of *voltaic alternatives* in atrophy of the optic nerve,—a method which, I understand, has been used by Drs. Faught and L. Webster Fox, of this city. Dr. Riggs believes that the physiological action of the remedy is more energetic with reversal of the polarity of the electrodes than with simple closures.

Before we can establish the status of electricity in the treatment of atrophy of the optic nerve, a proper classification of the types of the affection thus treated must be given by the reporters, and also, if possible, the precise cause of the malady. This deficiency is notable in many of the records and renders them valueless for scientific purposes. Moreover, these cases should not be published, no matter what the method of treatment has been,—strychnine, stretching, suspension, Séquardian injections, voltaic alternatives, antipyrin, the alteratives, or vaso-motor dilators,—without the most exact measurement of vision, direct and indirect, before, during, and after the treatment; neither should they be reported until sufficient time has elapsed to demonstrate that the improvement has been a permanent one.

Before leaving the subject of electricity, it is seasonable to refer to its use in troubles other than those connected with the optic nerve, particularly opacities in the vitreous humor. More than twenty years ago Carnos recommended the continuous galvanic current under these circumstances; and it was Toulon, I think, who recorded twenty-two cures among twenty-four cases thus treated,—an experience that is scarcely credible. Others have failed to secure the slightest improvement with electricity administered for this purpose, although I am aware that some of my colleagues, especially in this city, believe in its efficacy and employ it with satisfaction.

Within the last month Pansier\* contributes a number of observations on the use of the continuous current in the treatment of irido-choroiditis, and reports the disappearance of adhesions and a calming and sedative effect under its influence. The negative pole is applied to

the lids and the positive in the region of the superior cervical ganglion, with a current of five milliampères' strength. There is enough evidence to make it worthy of further trial, and it is desirable that those who have had an abundant experience should record their results.

Time does not permit the review of the many other interesting applications of electricity to ocular lesions, especially in the treatment of muscular asthenopia, paralysis of the orbital muscles, and corneal opacities.

We are prone to apply the best resources of our art to the relief of eye-strain in the widest acceptance of this term, and are ever endeavoring to perfect our methods for neutralizing refractive anomalies, imperfect balance of the external ocular muscles and deficient accommodative power. But it occurs to me we are not equally active, when all this has been accomplished, in subduing the local effects caused by long-continuance of these abnormal conditions. The picture of a hyperæmic nerve-head, imperfectly differentiated from the unduly flannel-red surrounding choroid, itself woolly in appearance and exhibiting faint dark areas in its periphery, indicating interspaces between its larger vessels, together with a streaked and slightly opaque retina, is familiar to all practical ophthalmologists. It is typical of the asthenopic and aching eye. Mydriatics, glasses, and rest do much for such eyes, but why not as well meet evident indications with remedial agents? We would medicinally treat other organs similarly affected, and why not the eye, when we can actually see the lesions, which in most of the other portions of the body can be inferred only from the symptoms? The iodide and bromide of sodium and potassium, iodide of iron, the alteratives generally and various preparations of ergot, naturally suggest themselves, and I suspect that cannabis indica has a distinct sedative influence upon the retina under these circumstances. When we remember that this congested condition of the deeper tissues of the eye may be a forerunner of organic changes, probably of cataract itself, I am persuaded that such therapeutic precautions are of great value, and if ophthalmology was in no other respect a debtor to Dr. Norris and Dr. Risley, their insistence upon the points just enunciated would always be a monument to their credit.

It is just about a decade since Koller's discovery of the anæsthetic properties of cocaine conferred upon ophthalmology an inestimable service. Since then, from time to time, other substances have come to the front, presenting their claims as local anæsthetics. Thus, we

\* *Annales d'Oculistique*, April, 1894.

have seen ouabaine, erythrophleine, lewinin, helleborein, and strophanthin struggle for recognition, and more or less quickly drop from the list of drugs useful in this respect. Often of pharmacological interest, the amount of irritation which they produce renders their practical application valueless. Whether the same fate awaits the new coca base, tropacocaine, called by Chadbourne, to whom we are indebted for a very interesting research as to its properties, tropsin, remains to be seen. Schweigger, it will be remembered, after several months' experience with this drug, reported favorably,—an experience that has been confirmed by his assistant, Dr. Silex.

Certain disadvantages connected with the use of cocaine are well-known and always avoided by careful operators, especially its power to wrinkle the corneal epithelium and to render this membrane more susceptible to the disturbing action of vigorous germicides, particularly bichloride of mercury. Recently, Mellinger, to whom we owe much for his excellent researches on sublimate opacities in the cornea, called attention to another hurtful action of cocaine,—namely, that it hinders, after section of the cornea, the development of a primary lamellar wound closure, and prevents the formation of a "coagulation support" in the parenchymatous portion of the corneal incision. These researches probably explain some cases of delayed union after cataract section and indicate the necessity of using cocaine in quantity only sufficient to anæsthetize the cornea.

Our list of mydriatics has been enriched within the past year by scopolamine, for the introduction of which we are especially indebted to Raehlmann. This drug, it will be remembered, is an atropoid alkaloid, from the roots of the *Scopolia atropoides*. Certain advantages have been claimed for it: that in smaller dose it is more active and also more sedative than atropine; that the duration of the mydriasis is shorter; that, if properly used, toxic symptoms do not occur; and, finally, that it has no unfavorable action upon intraocular pressure, even if there be pathological increase of tension.\* Raehlmann's communication has been followed by a number of reports abroad and by a few in this country, especially those of Derby in Boston and Pooley in New York, the latter observer being unwilling to commit himself to its superiority over other mydriatics. Sufficient evidence, however, has accumulated that it is a very efficient mydriatic and

cycloplegic agent, and I have no doubt that its exact status will be found when observations, which I understand are being made at present by Dr. Oliver, shall have been published.

When pyoktanin was first introduced by Stilling it threatened to make an impression on ocular therapeutics as intense as its own violent color, but gradually failure on the part of many observers to confirm the results reported by its introducer caused it to fall into disuse, although every now and then some stanch adherent of the drug comes forward and once more flaunts its claims. Perhaps, as Cordonnier has stated, much of the disappointment has been due to failure to obtain real pyoktanin, many of the violet dyes found in commerce being totally inadequate. Personally, I confess a lingering fondness for the drug in the treatment of at least one affection,—namely, purulent disease of the lachrymal passages,—although in all other respects it has failed me. It is mentioned now because it has recently been advocated, and very strongly, as an antiseptic and curative of great power in that dreadful disease, diphtheria of the conjunctiva. Sourdille, for example, uses a salve of methyl-blue (1 to 1000), because Janicke has demonstrated that Loeffler's bacillus does not grow in bouillon containing methyl-blue, even in very minute proportions. If this observation is correct, it is a very important one, and should be confirmed or refuted. The difficulty of judging of its value resides in the fact that it has been employed in connection with other remedies,—alkaline solutions and stronger antiseptics.

Time does not permit a review of the advances in the ocular applications of the antiseptics, nor, indeed, is the subject strictly pertinent to the present address. We have learned, however, from abundant experimental research, that complete sterilization of the conjunctival cul-de-sac and the ciliary margins is impossible, but that proper cleansing lessens the number and the vitality of the micro-organisms, and hence should never be omitted. Proper cleansing, however, does not mean the perfunctory introduction of strong solutions of germicides, especially sublimate, which, improperly applied, are without definite value, and are prejudicial to the corneal nutrition.

Considerable work has been done to establish the value of certain antiseptics compared with bichloride of mercury,—for example, cyanuret of mercury, so strongly urged by Chibret, trichloride of iodine, advocated by Pflueger, biniodide of mercury, endorsed by Panas and by Fenton of this city, and the recently-

\* The experiments of Lqbassow do not confirm this statement.

introduced formaldehyde, which, under special circumstances, Valude has eulogized as a substance of singular power, a recommendation which meets with confirmation in the research of Chas. Slater and S. Rideal,\* just published. Whether the tricresol, apparently destined to assume a front rank among antiseptic substances useful in general surgery, will prove of equal value to ophthalmologists, future experience will determine.

Although almost every germicide and antiseptic solution has been employed in that much-dreaded disease, ophthalmia neonatorum, nothing novel or distinctive has been added to the long list of remedies, unless, perchance, we except the revival of an old remedy,—namely, *copious irrigations* with a solution of permanganate of potassium. This drug, it will be remembered, has reached a prominent place among the remedies now employed by general surgeons in the treatment of urethral gonorrhoea, and there are indications that it should hold a place high in our esteem as an irrigating agent in the treatment of this disease.

While I do not decry the value of bichloride of mercury, properly used, in this affection, I am persuaded that it has very often been the means of seriously impairing the nutrition of the cornea on the one hand, and, on the other, has too frequently lulled the surgeon into a sense of false security, simply because he has introduced within the conjunctival cul-de-sac the solution of a drug which is credited with remarkable germicidal properties, properties which, however, are not exercised under these circumstances.

The serious nature of purulent conjunctivitis in new-born children is recognized by every educated physician, and it was perhaps no exaggeration when Rivière, of Bordeaux, declared that it alone was responsible for nearly one-third of the cases of blindness, and had placed in the care of Europe well-nigh one hundred thousand victims. We know that in our own country more than thirty-two per cent. of the blind owe their affliction to ophthalmia neonatorum, and therefore the measures to prevent it rank in importance with those employed against small-pox and tuberculosis, and demand the assiduous practice of the means which experience has taught to be effective. What these means are it is needless to detail to this audience, but I may be permitted to urge upon each physician here the necessity of his personal influence to assist in securing legislative regulations for the prevention of this appalling cause

of blindness. The matter, as you know, is in the hands of a committee of the American Medical Association, and under the guidance of so able a chairman as Dr. Lucien Howe, of Buffalo. Laws of this character have been passed in New York, Maine, Rhode Island, Minnesota, Ohio, and Maryland, and it is the sacred duty of each one of us to see that similar good legislation shall be enacted in the great State of Pennsylvania.

While, to quote from an editorial in the *Philadelphia Polyclinic*, "It is doubtless too much to claim that all cases of blindness from ophthalmia neonatorum are preventable, ophthalmic surgeons know that it would be very rare if reasonable care was exercised and efficient treatment always promptly inaugurated." When we remember that carefully-compiled statistics demonstrate that over seventy per cent. of all who become blind during the first year of life are rendered sightless by purulent ophthalmia, and that the victims of this disease represent a vast army of thousands upon thousands of human beings, there is a crying need for every measure properly conceived and properly carried out, medicinal and legislative, which shall prevent the disastrous results of this affection. He who takes a hand in this work engages, as Cohn has well said, in a labor worthy of the noblest.

#### A PRESCRIPTION FOR CHRONIC DIARRHŒA.

The *Journal de Médecine de Paris* for May 6, 1894, recommends the following:

R Salicin,  $\text{gii}$ ;

Syrup, a sufficient quantity.

Make into twenty pills, and give 1 pill every four hours.

#### THE TINCTURE OF ACONITE FOR TETANUS.

According to the *Journal de Médecine de Paris* for May 6, 1894, WEDEMAN has obtained excellent results from the use of this drug in tetanus, using the tincture in the dose of 5 drops every two hours and afterwards every four hours, or administering the following prescription:

R Chloral hydrate, gr. xxx;  
Bromide of potassium,  $\text{3i}$ ;  
Tincture of opium,  $\text{3ss}$ ;  
Tincture of aconite,  $\text{3i}$ ;  
Water,  $\text{3iii}$ .

Teaspoonful doses of this mixture may be given every hour.

\* *Lancet*, April 21, 1894.

# The Therapeutic Gazette

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## Leading Articles.

### THE TREATMENT OF MALIGNANT GROWTHS BY TOXINES.

THE medical profession has during the past year watched with constantly increasing interest the studies of those bacteriologists and clinicians who have from time to time contributed articles upon the value of the treatment of malignant growths by means of injections of pure cultures of the micro-organism of erysipelas or of the toxins derived from this organism and the bacillus prodigiosus. One of the most valuable and interesting of these papers was that of Dr. Coley, of New York, who during the past three years has been carrying out a series of clinical experiments in this line of work. One of his recent reports, it will be remembered, was published in the *American Journal of the Medical Sciences* for May, 1893. As a result of his studies he

reached the conclusion at that time that the injection of toxins produced results almost, if not quite, as good as those obtained by the use of the micro-organism of erysipelas itself, and that their employment was not followed by some of the disadvantageous symptoms and dangers which the micro-organism itself produced. His studies also seemed to prove conclusively that this method of treatment was practically valueless in carcinoma and most useful in cases of sarcoma, particularly where this growth was situated in soft tissues. A still later report has been made by Dr. Coley to the American Surgical Association during the recent Congress in Washington, which is summarized in the *Boston Medical and Surgical Journal* for June 14, 1894, as follows:

Twenty-five cases of sarcoma, eight cases of carcinoma, and two cases of sarcoma or carcinoma were treated with the combined toxins. Including one case treated by the injections of fluid living cultures, there were five cases in which it was reasonable to hope for permanent cure.

The first—sarcoma of the neck and tonsil, twice recurrent—has gone nearly three years without treatment.

A second—sarcoma of the back and groin—is perfectly well and free from recurrence fourteen months after cessation of treatment.

A third—sarcoma of the abdomen and pelvis—is in perfect health one year after leaving the hospital, and the very small portion of the tumor which had not been wholly absorbed has remained dormant.

A fourth—sarcoma of the abdominal wall, which had entirely disappeared under two and a half months' treatment with the toxins—is perfectly well and without recurrence three months after treatment was discontinued.

A fifth—sarcoma of the iliac fossa—is well within one year since beginning of treatment, with the tumor one-third the original size, and the element of malignancy apparently destroyed.

A sixth—recurrent sarcoma of leg and thigh—is still under treatment. The sarcoma of the stump, the size of a hen's egg, has entirely disappeared.

Of the remaining nineteen cases of sarcoma treated, nine others showed marked improvement, while in eight the improvement was very slight and in two no improvement was noted.

Of the eight cases of carcinoma, all but one showed more or less improvement, and in three cases it was very marked.

All of the cases treated were inoperable and hopeless. In all the diagnosis was not only es-

tablished by eminent surgeons, but confirmed by expert pathologists.

No rational explanation of the action of the toxins upon malignant tumors could be offered, except on the assumption that such tumors were of micro-parasitic origin. Admitting this theory, evidence in favor of which is steadily increasing, explanation would be easy,—namely, antagonistic bacterial action.

The conclusions drawn from the cases treated were as follows:

1. The curative action of erysipelas upon malignant tumors is an established fact.

2. This action is much more powerful on sarcoma than carcinoma.

3. This action is chiefly due to the soluble toxins of the erysipelas streptococcus, which toxins may be isolated and used with safety and accuracy.

4. This action is greatly increased by the addition of the toxins of bacillus prodigiosus.

5. The toxins, to be of value, must come from very virulent cultures and must be freshly prepared.

6. The results obtained from the use of the toxins, without danger, are so nearly, if not quite, equal to those obtained from an attack of erysipelas, that inoculation should rarely be resorted to.

This method of treatment has been tried to a very considerable extent in Philadelphia, with results by no means as encouraging as those which have been reported by Dr. Coley. It has been found to produce either no favorable influence, or in other instances the development of a high fever and other symptoms of reaction following the injection have so increased the patient's discomfort and sapped his strength that it has seemed as if the treatment actually hurried the patient towards his end. In two cases of osteo-sarcoma in which the toxins were employed, in which condition, by the bye, Dr. Coley also expresses doubt of their value, no favorable action was discoverable to the writer of this article; in fact, he is convinced that they did harm rather than good. The question as to the real value of this method of treating cases which, under ordinary methods, are absolutely hopeless is still, of course, open to debate, and this article is written not so much with the idea of condemning the method as of reflecting the views which force themselves upon us at this time. The very fact, however, that all such cases have been considered hopeless, and that Dr. Coley has reported recoveries in some instances, should make us very cautious about throwing discredit on a remedial measure which has been successful in any cases.

## THE TREATMENT OF HIGH ARTERIAL PRESSURE.

THE fact that high arterial tension is a condition which requires medicinal interference has become more and more recognized as we have employed the nitrites with constantly increasing frequency. Indeed, it is probable that many physicians of the present day who employ nitro-glycerin or other nitrites as cardiac stimulants in reality get the good results obtained solely through the decrease in the arterial tension, which results in the easier action of the heart. In other words, the improved action of the heart after nitro-glycerin has been given is not due to the fact that it has acted as a cardiac stimulant, but rather that by decreasing the work of the heart that organ is able to perform its functions more satisfactorily. A mistake is frequently made by the careless physician when called to a case in which the heart is evidently failing. Signs of cardiac exhaustion and of dilatation divert his attention from the high arterial pressure, and, as a result, he jumps to the conclusion that the failure of the heart is due to an actual lack of strength in that viscus, when in reality its failure is produced not because it is weaker than normal, but because the arterial tension is so great that even with compensatory hypertrophy it is almost impossible for it to force the blood through the contracted blood-vessels. Too frequently, under these circumstances, the physician attempts, by the administration of digitalis, strophanthus, or other cardiac stimulants, to so increase the power of the heart that it will overcome the tremendous resistance to its normal action. Sometimes, under the effect of this stimulation, temporary improvement does take place, but the rational therapeutics of such a case demands that the pressure shall be taken away, and the heart not only allowed to rest, but also quieted, in some cases, by drugs which, if not direct cardiac depressants, certainly act as sedatives to this organ. It would seem that in many cases of high arterial tension the spasm of the vessels is due more to a condition of hyperexcitability of the vaso-motor system than to any direct pathological change in the blood-vessel wall. For this reason the administration of nervous sedatives is often of advantage, either with or without the use of nitro-glycerin. A prescription such as follows may be employed in some of these cases with advantage, particularly as it aids in relieving the restlessness of the patient, who may rebel against being confined or deprived of exercise:

R Chloral,  $\text{gii}$ ;  
 Bromide of sodium,  $\text{gii}$ ;  
 Syrup of lactucarium,  $\text{f\text{3}i}$ ;  
 Water, q. s. ad  $\text{f\text{3}iii}$  M.

Sig.—A teaspoonful should be taken in a little water every four hours, or not less than three times a day.

In many cases, as is well known, the use of nitro-glycerin, while indicated by the condition of arterial tension, is contraindicated by reason of the headache which it produces in susceptible persons, and in such instances this prescription may also be given with advantage.

*THE MEDICINAL TREATMENT OF SOME  
 OF THE CONSEQUENCES OF  
 EYE-STRAIN.*

THE contest over the value of mydriatics in the correction of errors of refraction continues to be waged in certain quarters, but we believe that the vast majority of careful ophthalmic surgeons are not disposed to reject drugs which abundant experience has proved to be among the most necessary articles in their armamentarium, in spite of the contemptuous references to the "old-fashioned" practice of dilating the pupils before endeavoring to select suitable glasses for the patient, which are occasionally heard.

In a previous issue of the THERAPEUTIC GAZETTE we point out that the cycloplegic action of atropine and other alkaloids of allied physiological properties is only one of several effects which they produce when their solutions are instilled into the conjunctival cul-de-sac under the circumstances just named. Perfectly willing to admit that the terms "congestion of the choroid," "hyperæmia of the nerve-head," "retinal striation," etc., are vague and do not indicate exactly the nature of the process which they attempt to designate, we are none the less persuaded that the retino-choroidal disturbances which are manifest to the ophthalmoscope in eyes long the subjects of strain from uncorrected ametropia do not disappear, and consequently comfort does not ensue, if the refractive error is neutralized without the use of mydriatics. Whether they act by producing perfect physiological rest for a certain number of days (and therefore atropine is the best of all of them), or whether they have some local sedative effect the nature of which we do not quite understand, or whether both of these actions are combined and associated with still others connected with their influence upon local circulatory conditions, is a matter of small importance. The fact remains that these choroidal disturbances disappear when they are

judiciously used, and that comfort and increased ocular health are results otherwise unobtainable.

We are not alone, however, dependent upon the use of mydriatics for securing these results, but may turn with confidence to certain constitutional remedies, prominent among which are the iodides of sodium and potassium, the bromide of potassium and allied salts, ergot, the iodide of iron, mercury in small doses, particularly the bichloride and biniodide, and finally cannabis indica, although perhaps the last-named drug has no selective influence upon the coats of the eye itself, but exercises beneficial influence in a more general way. No one who has watched the steady improvement in the color of a congested nerve-head, the disappearance of the so-called lozenge-like clouds in the periphery of the choroid, so well and so often described by Dr. Risley, and even fine opacities in the vitreous under such lines of treatment, can possibly doubt the efficacy of these drugs. The effort of all treatment is to restore the eye to the highest state of health, and this state cannot be reached so long as the lesions described exist.

Material aid in this respect, after the effect of the mydriatic has subsided, may be gained by the use of two local measures,—namely, hot water and a weak solution of the sulphate of eserine or the hydrochlorate of pilocarpine. It is a well-known therapeutic law that the physiological effects of remedies are frequently more accurately obtained when the drugs are given at stated intervals during the twenty-four hours. So it is with these local measures,—for example, if hot douches or hot stoups are used for exactly the same number of minutes at the same hour night and morning, the local sedation is more effectual than that which follows similar applications at irregular intervals.

Insufficiencies of the lateral orbital muscles so evidently need mechanical treatment in the majority of instances, whether this be with prisms, prismatic exercises, or operative interference, that we do not often employ drugs for their relief, unless we make an exception of strychnine, which, for a long time has been utilized on account of its stimulating effect upon the nervous apparatus, and no doubt every one has seen cases in which good results have followed this treatment. Perhaps these results have been due to the general tonic effect of the drug, just as a muscular insufficiency will often improve when the whole system is brought into better condition by any other form of constitutional treatment. There are a few cases, however, in which either strychnine itself, or, better,

as the writer of this note believes, nux vomica, in the form of a good tincture, seems to have a species of selective influence, although it is confessedly difficult to differentiate between its general action and what may be called its local tonic effect. Be this as it may, either full doses of strychnine, or ascending doses of tincture of nux vomica, the latter drug being increased until the patient is taking 50 or 60 drops three times a day, are at times followed by a marked relief from muscular asthenopia, particularly if the interni are insufficient. Necessarily this method of treatment has not always been used to the exclusion of other measures,—glasses, prisms, and exercises; hence its exact therapeutic relation is difficult to determine, but it is always a proper method to try, provided the retina is not in a state of irritability. If it is, the strychnine or nux vomica is apt to increase the aching of the eyeballs, and is contraindicated precisely as it is in the early stages of irritative lesions in the nervous centres. This fact may explain many of the failures to gain relief with these drugs, when the character of the insufficiency would seem to indicate them.

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*THE DANGERS OF NON-STERILE ALKALOIDAL COLLYRIA IN CORNEAL LESIONS.*

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**O**PTHALMIC surgeons are accustomed to exercise every precaution to secure sterilization of the collyria which are to be used after a section of the cornea,—for example, in the extraction of cataract, or similar operation necessitating opening of the anterior chamber. In recent times much attention has been directed to this subject, and we are now in possession not only of the best methods of chemical sterilization, but of certain ingenious tubes and flasks, by means of which at the time of the operation the solutions of cocaine, eserine, or atropine may be rapidly rendered perfectly aseptic by means of heat.

Chemical and bacteriological investigations have proved the necessity of such precautions, because, sooner or later, the solutions of the alkaloids used in ophthalmic practice are infested with micro-organisms,—namely, the micrococcus aquatilis, the bacillus liquefaciens, the proteus vulgaris, the micrococcus prodigiosus, the bacillus implexus, and with various fungi, particularly the aspergillus glaucus. Of these organisms, the proteus vulgaris, the micrococcus prodigiosus, and the bacillus implexus, when introduced into the anterior chamber, are

capable of producing a purulent inflammation of the iris, cornea, and deeper coats of the eye.

It is not alone in connection with surgical manipulations, however, that unclean solutions present dangerous features. They are almost certainly the cause of the toxic conjunctivitis (atropine, eserine, and cocaine conjunctivitis), and, probably, as Philippson long ago declared, the direct source of certain ulcers of the cornea, which, at first simple in character, become infected with these impure drops, and pass into a serpentic or sloughing condition. Recently De Wecker has called renewed attention to this danger, and has practically stated that in the vast majority of cases the use of atropine or eserine in the treatment of corneal ulceration is prejudicial to the cure of the case. He has come to rely almost entirely upon mechanical and antiseptic measures; for example, curetting the corneal ulcer while its surface is being sprayed with a boracic-acid solution, and subsequently bandaging the eye with a dry sterile dressing. While such treatment has much to commend it, we cannot, of course, entirely set aside the use of atropine under these circumstances, particularly when the iris is associated in the inflammation and we wish for the mydriatic effect of the drug. We can, however, with very little difficulty, render these alkaloidal solutions sterile when they are used by the surgeon himself or by competent attendants. It becomes a question, however, whether patients, particularly those who frequent dispensaries, should be given atropine and eserine drops for home use. When we remember that within a very few hours after these solutions come from the druggist's shop they are contaminated with fungi and, after careless handling, with positively pathogenic micro-organisms, it is extremely likely that an ordinary simple ulcer of the cornea, or perhaps an abrasion, may be readily infected, and develop into a sloughing lesion. Therefore it seems wise to insist upon the daily attendance of patients thus affected, so that skilled hands may introduce into the conjunctival cul-de-sac clean solutions, when these are needed.

If the patients can be retained within the hospital (which, unfortunately, is frequently impossible), no source of anxiety on this score is created; but it is more than doubtful whether solutions of atropine given to careless attendants, and still more carelessly used in homes far from cleanly, can be of the slightest service in bringing these corneal ulcerations to a favorable termination; and De Wecker's warning may well be considered, even if we are unwilling

to accept his somewhat sweeping assertion in regard to the valuelessness of alkaloidal collyria, under most circumstances, in the treatment of corneal ulcers.

The necessity for sterilizing solutions frequently, even when they are used by properly-accredited attendants in hospital practice, is, perhaps, too frequently overlooked. More than one recent investigation has shown that the solutions, bottles, and pipettes in treatment cases thus employed are thick with contamination. Therefore each dispensary service, where numerous cases of corneal disease require treatment, should be provided with one of the several excellent sterilizing apparatuses now on the market, which may be so readily and so promptly used that this source of contamination is easily removed.

#### THE PRECOCIOUS TREATMENT OF SYPHILIS.

IN accordance with the teaching of the great syphilographer, Fournier, perhaps the general custom the world over is to delay constitutional treatment of syphilis until secondary manifestations—that is, pronounced constitutional involvement—have established the diagnosis beyond peradventure.

Jullien, a specialist of almost as wide experience, strongly advocates a treatment quite the reverse of this. It is worthy of note that thirty years ago, Diday, questioning what might be called the expectant treatment, made a careful study of a series of cases, one set receiving practically no treatment, the other subject to the full influence of mercury as soon as the primary manifestation was unmistakable. He noted as a result that secondary manifestations were retarded about seven days, but that they were by no means prevented. He, moreover, stated that mercury thus administered seemed to lose its efficacy, and that when these delayed secondaries appeared they were more rebellious to treatment than where no drug had been administered.

Jullien, as a result of similar investigation undertaken some twenty years later, arrived at quite contrary results.

On the employment of the drug hypodermically beneficial effects were still more marked, so that secondaries were delayed not merely for days, but for several weeks, and even when they appeared they were less numerous, thus showing that the action of the virus is not only retarded, but attenuated. The question then naturally arose as to whether by a vigorous and prompt treatment not merely attenuation could

be accomplished, but absolute destruction of the specific poison. As a result of experiments in this line, he finally settled upon the hypodermic use of calomel as proving most efficacious. The preparation he uses is as follows:

R Calomel, gramme i;  
Vaseline, grammes x;  
Sig.—Administer in ten injections.

Of course this mixture must be perfectly sterile. The sublimated calomel should be washed with alcohol and dried in hot air. The vaseline should be distilled and the mixture should be made in a vessel which has been sterilized and flamed and kept perfectly aseptic. The skin is prepared as for a surgical operation, and the hypodermic needle and syringe are boiled. The injection is driven deeply into the muscular tissue of the external iliac fossa and the punctured point is dressed with collodion. Provided the kidneys are healthy, and on this point the surgeon should always assure himself before beginning treatment, there is no danger of salivation, of local septic infection, or of any other complication. The calomel lies in the tissues and is slowly absorbed. In experiments upon animals eighteen months after injection, traces of the drug were found at the seat of operation. The very fact of the drug thus becoming stored in the system necessitates most careful watch for its first constitutional symptoms. Those most commonly observed are gingivitis, thoracic oppression, and a tendency towards syncope. When any such symptoms develop, the drug should at once be suspended. Jullien holds that the moment a primary lesion is detected, if it is favorably situated, it should be excised, but whether or not this operation is performed, no time should be lost in starting the calomel treatment. The injections are made in regions approximately near the seat of primary infection. Thus, if the sore is placed upon the breast or the face, the post-scapular regions are selected. As an immediate result the primary lesion cicatrizes rapidly. Often no true ulceration takes place. This in itself is almost diagnostic of the specificity of the lesion. The series of injections is repeated at about fifteen days' interval. In about two or three or four months a few superficial mucous patches and some slight, irregular, scarcely perceptible skin lesions appear. In the first two months an injection of calomel is made every fifteen days in the dose above mentioned. The ordinary man bears 10 centigrammes very well; those in poor health receive from one-half to three-fourths of this dose. After the second month



an injection is given every twenty days, then every twenty-five or thirty days, in accordance with whether the secondary lesions present themselves or not. After six months soluble preparations may be substituted. Jullien states that he has applied these principles to thirty cases, all of which have been most carefully observed, and as a result he announces himself more than ever convinced of the fact that the most successful treatment of syphilis depends upon the vigorous administration of mercury from the onset of the primary symptom, without allowing the loss of precious time while waiting for the positive diagnosis based upon secondaries. Indeed, there is not a disease in which this principle is not generally recognized that the most successful attack is that made in the beginning.

Guyard, while practically agreeing with Jullien in regard to the importance of the early treatment of syphilis, holds that equally favorable results are to be obtained by other means. Thus, he administers sublimate by the mouth in full doses, holding that otherwise no beneficial effects are obtained. Thus, when the protiodide of mercury is given, at least four grains a day should be administered; the sublimate he gives in 1- to 2- to 3-grain doses.

This treatment proposed by Jullien, or, at least, some modification of it, certainly commends itself to the common sense of every careful student of syphilology. Recently there appeared the promise of a new and entirely efficacious method voiced by Pellizzari and based on modern pathology and coming therapeutics. He endeavored as soon as the chancre appeared to immunize the patient by blood-serum taken from patients who had already suffered from secondaries, and who exhibited no lesions. His results, satisfactory as they were, do not compare with those cited by Jullien. Though this method of immunizing is full of promise, it has not brought us anything of practical value, and we still have to fall back upon the specific which has served us so well for many years; that this has a retarding and destroying effect upon syphilitic virus none deny. This being the case, that the early use should retard and render more mild the secondaries seems self-evident. The objection to this lies in the fact that diagnosis from a primary sore alone is impossible. It is impossible, however, only in a very small percentage of cases, but it is probable that the results in large numbers of cases treated would be better were a plan similar to Jullien's followed, though it is undoubtedly true that a certain very small number of cases would be

subject to specific treatment, although they in reality had never acquired syphilis.

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## Reports on Therapeutic Progress.

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### *THE DIETETIC TREATMENT OF DIABETES MELLITUS.*

An interesting paper on this topic is that published in the *Medical Chronicle* for May, 1894, by WILLIAMSON.

Many substances have from time to time been employed (gluten bread, bran cakes, almond bread, etc.). The great objection to these breads are: (1) they are mostly exceedingly expensive; (2) they are often very unreliable; (3) they are not tolerated for any length of time by the patient. With a very little trouble a diabetic patient can have a number of diabetic breads and cakes prepared at his own home, and such home-made preparations are more reliable, less expensive, and more palatable than the majority of those so largely advertised by various firms. Ebstein has drawn attention to the value of a substance named, in Germany, aleuronat. This is a vegetable albumin prepared from wheat by a chemist, Dr. Hundhausen. From this substance bread can be baked by the addition of ordinary flour. It is a cheap form of albumin, and can be used as a substitute for ordinary flour in the preparation of soups, sauces, etc. It is a yellowish powder, and contains from eighty to ninety per cent. of albumin in the dry substance.

The following are the directions for the preparation of bread containing about fifty per cent. of albumin in the dry substance. Aleuronat and white flour are mixed in equal quantities:

- Two hundred grammes white flour equals about seven ounces;
- Two hundred grammes aleuronat equals about seven ounces;
- One hundred and twenty-five grammes butter (of the best quality) equals about five ounces;
- One teaspoonful of salt;
- Twenty grammes (400 grains) of baking-powder.

The flour and aleuronat are mixed in a dish warmed to a temperature of about 30° C., and the melted butter and milk (made lukewarm) gradually added, then the salt, and finally the baking-powder (one part of sodium bicarbonate and two parts of cream of tartar). The dough is well mixed, then formed into loaves, and baked at a good heat.

Cakes composed of aleuronat and cocoanut-

powder are very palatable, very cheap, and are particularly free from starch :

Two ounces of the finest desiccated cocoanut-powder;  
Two ounces of aleuronat;  
One egg;  
A little milk.

The egg is beaten up, and the aleuronat and cocoanut-powder added, together with a very small quantity of milk. The mass is stirred together until a dough is formed. This is cut into thin cakes and baked. The addition of milk is not necessary.

Pavy long ago recommended almond cakes as a substitute for bread in diabetes. The sweet almond contains nine per cent. of sugar and dextrine, but by washing the meal with boiling acidified water, the greater part of the sugar is extracted. Almond meal washed in this manner is almost free from carbohydrate. It contains twenty-four per cent. emulsin and fifty-four per cent. fat.

Owing to the large quantity of fat which they contain, these almond cakes are not easy to digest. Another objection is the price. Only wealthy patients can afford them.

Seegen gives the following directions for the preparation of almond cakes :

One hundred and twenty-five grammes (about one-quarter pound) of sweet almonds are ground as fine as possible in a stone mortar. To remove the small quantity of sugar which the almonds contain, the pounded mass is enclosed in a linen bag, and this is soaked for a quarter of an hour in boiling water to which a few drops of acetic acid have been added. The almond meal is then mixed well with three ounces of butter and two eggs. Then the yel-low of three eggs and some salt are added, and the mixture thoroughly well beaten up. The white of three eggs is beaten up into a froth and then mixed with the above. The mass is divided into cakes and baked by a gentle fire.

Saundby gives the following directions for the preparation of almond cakes :

One pound of ground almonds;  
Four eggs;  
Two tablespoonfuls of milk;  
A pinch of salt.

Beat up the eggs and stir in the almond flour; divide in twelve flat tins, and bake in a moderate oven for about forty-five minutes.

A pound and a half of cakes prepared in this manner cost one shilling and six pence.

Saundby also gives directions for the preparation of cocoanut cakes :

Three-quarters of a pound of desiccated cocoanut;  
One-quarter of a pound of ground almonds;  
Six eggs;  
Half a teacup of milk.

Beat up the eggs, and stir in the cocoanut and almond flour; divide into sixteen flat tins, and bake twenty-five minutes in a moderate oven.

Desiccated cocoanut costs four and a half pence per pound, and the cost of one and a half pounds of the above cake is one shilling two pence.

In Iceland and Lapland, Iceland moss (*cetaria*), deprived of its bitter principle, is used as an article of diet. The soluble portion is taken up by boiling water, and the decoction in cooling thickens and deposits a gelatinous mass. This soluble gelatinous substance is known as lichenin.

Saundby has published directions for the preparation of a pudding made from Iceland moss, which is much appreciated by diabetic patients.

For three hours the Iceland moss is soaked in water, then boiled in milk for three-quarters of an hour, strained, and poured into a mould and allowed to get cold. It may be sweetened, if necessary, with glycerin or saccharin.

#### CICATRICAL NARROWING OF THE OESOPHAGUS.

TRETZE (*Deut. Med. Woch.*, 1894, Nos. 16 and 17) discusses the treatment of the narrowing consequent upon swallowing corrosives. He first records a case in a man, aged twenty-six, coming under treatment early. A peri-oesophageal abscess developed, and gastrostomy had to be performed. The stricture was ultimately successfully treated by bougies, and the gastric fistula healed spontaneously. The principle of not passing a bougie for some time in such cases is very generally admitted. Gastrostomy must not be delayed too long. Any question of oesophagotomy can hardly arise here. The diagnosis of abscess cannot be made until pus is spat up. A second stricture was present lower down in this case, and probably another in the neighborhood of the pylorus. In cases of long standing the bougie should be used, but it is not always successful. The lumen of the tube may be eccentric, or a diverticulum may exist above the stricture. In such cases, where fluids pass with difficulty and the nutrition of the patient is clearly suffering, gastrostomy should be done. An example is given of a fatal case in a child, aged one and three-quarters years, where delay precluded the

idea of an operation. Again, in severe cases, where fluids are swallowed with difficulty, and even small bougies pass, yet gastrostomy may be the only means of successful treatment. Hitherto bougies have been the sovereign remedy here. The passing of bougies is not unattended with danger. A case is recorded in a boy, aged sixteen, in whom, twelve days after gastrostomy, a thread was passed with a sound through the whole length of the œsophagus, one end coming out through the nose and the other through the gastric fistula. A drainage-tube was eventually passed through the stricture, and left. Dilatation was effected, and eventually the gastric fistula was allowed to close. In cases where fluids can still be swallowed and yet no bougie can be passed, a shot, with a thread attached to it, may be swallowed (after gastrostomy), and a drainage-tube thus be got through the stricture. If this procedure is not successful, bougies may be passed up the œsophagus through the stomach. A case of a boy, aged one and three-quarters years, is recorded, in which the dilatation of the stricture (opposite the upper limit of the thorax) could not be effected by way of the stomach. Œsophagotomy was performed, and a diverticulum was found above the stricture. A silk thread with a sound was passed through the œsophagus, and a drainage-tube introduced in this way. Bougies were subsequently passed. The œsophagotomy wound closed in four weeks, and the gastric fistula in one year and three-quarters after its formation, the patient being eventually perfectly well. Another case is related in a girl, aged twenty-two, in whom, after gastrostomy, attempts were made for some time to dilate the stricture from below, but a bougie could not be passed from above. Œsophagotomy was performed, a diverticulum found, and a communication made between this latter and the descending part of the curve into which the œsophagus had been thrown. A drainage-tube was got through, and dilatation completed with bougies, the patient eventually recovering. The author draws attention to the value of gastrostomy in these cases in (1) finding out the site of and treating the stricture, and (2) maintaining the nutrition of the patient. For these temporary gastric fistulæ Witzel's method is recommended. The author holds that (1) gastrostomy should be done in severe cases more often than it has been in the past, (2) continuous dilatation with a drainage-tube is more rapid and less dangerous than with bougies, and (3) combined gastrostomy and œsophagotomy may lead to success in some cases.—*British Medical Journal*, May 26, 1894.

#### THE ACTION OF BROMETHYLFORMINE IN THE TREATMENT OF EPILEPSY.

G. BARDET (*Les Nouveaux Remèdes*, April 24, 1894) publishes the experience of Féré, who has studied the action of *bromethylformine*—a derivative of formol—in the treatment of epilepsy. The new medicament, which is supposed to be represented by this formula,  $C_2H_5N_2.C_2H_5Br$ , is well borne by the animal economy. As a sedative, it has been given to children and adult women, in doses of from 30 to 60 grains (2 to 4 grammes), without causing the untoward after-effects frequently produced by the metallic salts. The remedy under consideration appears to have rendered good service in epilepsy, as shown by the results observed in six cases of that disease reported by Féré. It is asserted that the bromethylformine acts as an excellent substitute to the potassium salt, being particularly indicated in those individuals that exhibit idiosyncrasies against the latter medicament. The bromethylformine appears somewhat weaker in its action, but it is advantageous, from the fact that it does not cause the eruptive phenomena produced by the bromide of potassium. It is affirmed also that in those cases in which the cutaneous trouble was present as a consequence of the administration of the potassium salt, the ingestion of bromethylformine effected the disappearance of said eruption. This remedy is recommended in doses of from 3 to  $3\frac{3}{4}$  drachms (12 to 15 grammes) a day.

#### THE THERAPEUTIC USES OF THE GLYCERO-PHOSPHATES.

In a preliminary communication, ALBERT ROBIN (*Gazette Médicale*, April 28, 1894) treats of the uses of the glycerophosphates in clinical medicine, and concludes as follows:

1. The glycerophosphates are powerful therapeutic agents, ameliorating the general nutrition through an action upon the nervous system.
2. They are especially indicated in nervous depression.
3. Hypodermically injected, these remedies produce effects still more pronounced than those of the testicular juice, whose medicinal virtue depends upon the amount of organic phosphorus which it contains. The employment of the glycerophosphates, definite products, and the dose of which can be regulated, is preferable to that of the testicular liquid, an uncertain remedy and susceptible of alteration.
4. The observations so far made point to the

possibility that the subcutaneous injections of the glycero-phosphates can be utilized in the treatment of nervous asthenia (whatever the cause of the trouble), of phosphated albuminurias, of phosphaturias, of Addison's disease, of the various forms of sciatica, and of facial tic douloureux. In locomotor ataxia the results have been uncertain, but they point to a diminution of the lancinating pains occurring in this disease.

#### APPENDICITIS.

PERIER contributes a note upon this subject to the *Journal de Médecine de Paris* for April 22, 1894. In children he directs that the pain shall be relieved by small doses of extract of opium or by small quantities of morphine. For the vomiting he directs that small pieces of ice or frozen champagne should be given, and that a rectal injection shall be used night and morning, composed as follows:

R Borax,  $\text{giii}$ ;  
Boiled water,  $\text{Oii}$ .

One-half of this to be used in each injection.

If, after this has been done for two days, no symptoms of amelioration ensue, surgical measures should be resorted to. The diet should be absolutely a liquid one, with rest in bed, small quantities of pure water or milk given frequently, and everything done to keep the patient in good condition for operative procedures.

#### THE TREATMENT OF URTICARIA.

In the *Journal de Médecine de Paris* for April 22, 1894, is an article upon this disease. The indications which are to be met in its treatment are the removal of the cause and of the symptoms. It is to be remembered that among the causal factors are a large number of vegetable substances and parasites, and that, in addition, fish, shell-fish, and similar articles of food may produce these symptoms. Among the important drugs which produce urticaria are antipyrin, arsenic, copaiba, chloral, salicylic acid, santonin, the iodides, bromides, and turpentine. Often these eruptions can be relieved by external applications, and of course the causative factor in the eruption should be removed. Certain dermatologists regard urticaria as a disorder of vaso-motor innervation, depending upon a diathesis, and have therefore based their treatment as follows: For vaso-motor disorders they administer sulphate of quinine in the dose of 4 grains twice a day, or 10 grains of ergotine divided in morning and

night doses; or, again, 10 to 20 drops of tincture of belladonna during each day; or, again, they substitute for belladonna the sulphate of atropine in the dose of  $\frac{1}{160}$  grain twice a day.

Brocq recommends the employment of ergotine and belladonna and quinine as follows:

R Hydrochlorate of quinine, gr. i;  
Ergotine, gr. i;  
Extract of belladonna, gr. ss;  
Glycerin, q. s.

Make into one pill and administer 8 to 16 pills, giving 2 pills at a time.

For the urticarial diathesis a severe alimentary régime should be instituted. Red meats and similar substances should be avoided and only white meats taken. Heavy rich foods are also to be avoided. Should an arthritic diathesis be present, alkalies, such as bicarbonate of sodium or Vichy water should be used, or one of the mild purgative alkaline waters resorted to.

Should the urticaria be due to dyspepsia with constipation, the following prescription may be given:

R Benzonaphthol,  
Powdered rhubarb,  
Calcined magnesia, of each, gr. v.

Make into one cachet, and administer such a cachet half an hour before each meal.

Should diarrhoea be present, order:

R Betanaphthol,  
Salicylate of bismuth,  
Prepared chalk, of each, gr. v.

To be put into one cachet, which is to be taken after each meal.

Should nervous irritation be sufficient to prevent sleep, some mild hypnotic may be given,—such, for example, as a small dose of opium, or sulphonal in the dose of 8 grains. Should the nervous irritation be very great, as much as 30 grains may be given in a day; or, in other cases, cachets containing as much as 4 grains of chloralose may be given four times a day. Often, too, bromide of potassium, in moderate dose, with extract of valerian is useful. For the local treatment, lotions and powders are chiefly indicated. Baths are also useful. The patient is directed to take a bath of moderate temperature for a quarter of an hour. The bath contains one litre of vinegar, one litre of glycerin, and two drachms of corrosive sublimate. It should be taken in a porcelain or wooden tub. In relation to lotions there is much room for choice. Some recommend ether in the proportion of one-third, others

vinegar one-third, or, again, Cologne-water in the proportion of one-third, or the following prescription may be used as a lotion :

R Corrosive sublimate,  
Chloride of ammonium, of each, gr. ii;  
Aqua lauro cerasi, ℥iiss;  
Distilled water, ℥viii.

Of the powders to be employed after the bath, we may use simple powdered starch, one-fourth of oxide of zinc, one-tenth of salicylate of bismuth, or one-fiftieth part of camphor. Of the salves, those which contain menthol or phenol are of most value, as, for example, the following prescription :

R Vaseline, ℥i;  
Oxide of zinc, gr. xlv to gr. lxxv;  
Menthol or phenol, gr. v.

#### THE ABSORPTION OF IRON.

MACALLUM (*Journ. of Phys.*, April, 1894) finds that inorganic iron is absorbed (in guinea-pigs) by the intestinal mucous membrane. Whatever iron salt was administered, whether the phosphate, chloride, sulphate, or "peptonate," when the dose was not very large, the evidence of its absorption was very plain in the villi of the upper end of the small intestine, but in them only. When the dose was large, the presence of iron in the villi was observed far down the intestine, but the reaction for iron was less distinct the more remote the villus from the pylorus. With very large doses of the phosphate or "peptonate," the villi near the cæcum gave an intense reaction. It is suggested that the reason for this difference is that, when the dose of iron is small, and when consequently the quantity of iron in the chyme is small, it is wholly precipitated by the alkaline, biliary, and pancreatic secretions; as these three fluids do not at once and completely mingle, the iron is not at once precipitated, and consequently absorption goes on in the first few inches of the intestine. The acidity of a larger dose of iron salt may be sufficiently great to destroy the alkalinity of the chyme after admixture with the bile and pancreatic juice, and, when this is the case, the unprecipitated excess of iron salt will go on down the intestine and be absorbed lower down. When the oxide or the reduced metal is given, a certain quantity of the acid of the chyme is taken up in effecting their solution, and therefore in the intestine the alkalinity of the bile and pancreatic juice must go further in the precipitation of the iron. Speaking generally,

the larger the amount of free acid in the chyme the greater must be the quantity of iron absorbed. Sulphides in the contents of the bowel will also precipitate the iron still in solution. On an ordinary diet, therefore, the extent of intestinal mucous membrane which absorbs iron must be, in proportion to that which does not, remarkably small. Macallum, however, thinks it possible that in anæmia there may be a diminution in the amount of the biliary and pancreatic secretions, a condition which, for the reason above stated, would prevent precipitation, and thus favor absorption. His grounds for stating that iron salts are absorbed—a fact which has been denied—are drawn from microscopical examination of the mucous membrane under various conditions. In well-fed guinea-pigs taking iron the intestinal mucous membrane, after treatment with alcohol, assumes, when treated with ammonium sulphide, a more or less dark color, due to the formation of sulphide of iron, which, under the microscope, is seen to be limited to the sub-epithelial portions of the tips of the villi. Here it is deposited in leucocytes which surround the end of the lacteal vessel. When the dose of iron is larger, or, apparently, when the administration is continued for a long time, the iron is present also in the epithelial cells themselves, and passes from them by a process of internal secretion into the plasma of the venules. These venules are the portal radicles, and leucocytes containing iron are found in capillaries of the liver, and the peripheral cells of the lobules contain iron. Similar leucocytes are found in the spleen. Beyond this point the iron was not traced, and the question whether it is ultimately assimilated and fixed as inorganic iron remains unsettled; but the research serves to prove that iron salts have not, as has been asserted, merely a stimulant action on the epithelial cells of the mucous membrane. Any stimulant action they may exert is a concomitant of their absorption. Though some of the subepithelial leucocytes of the villi appear thus to carry part of the absorbed iron into the general circulation, the more important agent in the transference of the inorganic iron from the villi to other parts of the body is the blood plasma.—*British Medical Journal*, May 5, 1894.

#### THE TREATMENT OF CHOREA.

*L'Union Médicale* for May 12, 1894, gives the following :

Intellectual and physical rest, with sulphur-water baths and bitter tonics, such as quinine

and arsenic for mild cases. In other instances which are more severe, great care should be taken as to the hygienic and gymnastic treatment of a patient, and if insomnia is marked, bromide of potassium should be given but not continued for a long time.

A useful prescription in these cases is,—

R Valerianate of zinc,  
Extract of belladonna,  
Subnitrate of bismuth, of each, gr. xv.

To be made into forty pills, 1 or 2 of which should be given three times a day.

If arsenic is indicated, it is well to employ the arsenate of sodium in the dose of  $\frac{1}{16}$  to  $\frac{1}{8}$  grain progressively increased. Sometimes good results follow from spraying the back of the neck with ether or chloride of methyl. If the case is a very grave one, from 15 to 30 grains of antipyrin may be given a day in fractional doses, and chloral resorted to to produce nervous quiet. It is also well if the patient is strong enough to give a cold douche morning and night, followed, after two or three minutes, by active friction to produce reaction. Should the case become exceedingly severe, inhalations of chloroform are used.

#### TREATMENT OF DYSMENORRHEA.

DR. SCHWARZE (*Therapeutische Monatshefte*, May, 1894) discusses, first, dysmenorrhœas associated with pathological ante flexion and with retro flexion of the vaginal uterus, and with different forms of deficient development of the uterus; secondly, all dysmenorrhœas without recognizable anatomical change.

The first group have this in common, that they may all be referred to a deficient muscular development, to flabbiness or delicacy of the walls of the organ. He thinks that in stenoses of the external and internal os, it is the hypoplasia, not the stenosis, which is the chief factor. So, too, with pathological ante flexion and retro flexion, defective development, not change in position, plays the chief rôle.

In the case of girls in the period of development, general treatment of the frequently associated anæmia and chlorosis is to be employed, including internal treatment in addition to baths, and residence in the country or mountains. In obviating the pain during menstruation, rest and antipyrin, phenacetin, antifebrin, exalgin, and salicylate of sodium play a great rôle.

Frequently the pains disappear under this

treatment, and frequently they do not, in spite of the fact that the anæmia is overcome and the patients become blooming. Ergot sometimes succeeds in such cases, but more often fails. Now the treatment becomes more difficult. It is necessary to mitigate the periodical pains with narcotics. So long as this can be done with codeine or cautious doses of opium, or with atropine or belladonna, there is nothing to be said against it. Frequently these are not sufficient; but beware of the use of morphine. It is least likely to induce a habit in those cases in which only the first menstruations are painful.

We possess, however, two agents not sufficiently appreciated. The first of these is the gymnastic, mechanical treatment of the disease, which was introduced by Thure-Brandt. It is applicable to non-inflammatory cases. The movements which Thure-Brandt recommends are (1) percussion of the loins; (2) rolling of the thigh; (3) with the patient in a standing position, the knees are bent and stretched against her apposition; (4) rolling of the feet; (5) separating the knees and leaning backwards. The movements are performed at home, if possible daily, at any rate daily for one week before menstruation. Favorable results follow this treatment. Schwarze asserts that patients who dance or ride horseback some days before menstruation have much less pain, or none at all.

But in well-developed, not anæmic women, who suffer violently from dysmenorrhœa, special gymnastics are not to the purpose. Here, in non-inflammatory cases, viburnum prunifolium gives brilliant results, which are not to be obtained with any other remedy, except morphine. Schwarze gives a teaspoonful of the fluid extract three times daily, beginning from five to seven days before menstruation.

Schwarze is opposed to local massage in the dysmenorrhœa of maidens, but thinks it is a powerful aid in sterile women. The simplest local measure is the introduction of a sound into the uterine cavity shortly before menstruation. In cases in which introduction of a sound gives transient improvement only, cure is not often obtained with bougies. Dilatation is best done several days in succession, a short time before menstruation.

Electricity he always recommends in severe cases before dilatation. The most satisfactory way is with the galvanic current, with the negative pole, an aluminum sound, introduced into the uterus, and the positive pole, in the form of a flat electrode as large as possible, laid upon the abdomen. A current strength of fifty

to one hundred and fifty milliamperes is employed.

In cases which resist all treatment for years, castration is indicated. But it may be that the nervous disturbances have reached so high a degree that separation will not occur. In other cases the dysmenorrhœa is only one manifestation of a neuropathic condition.

Finally, Brunnberg, of Upsala, has treated twenty-four cases of severe dysmenorrhœa with hypnotism, and cured fourteen and improved seven.

#### SERUM TREATMENT OF DIPHTHERIA.

EHRlich, KOSSEL, and WASSERMANN (*Deut. Med. Woch.*, April 19, 1894) relate their experiences in continuation of the researches of Behring in Professor Koch's institute. The serum was obtained from goats artificially made immune; the milk from these animals also contains the protective substances. The immunity was induced by giving them increasing doses of dead diphtheria cultures. The authors adopt the method of ascertaining the amount of antitoxines present by means of neutralization; making use of a virus equivalent to 3 in 1000 grammes body-weight. The immunity-producing unit is such that .1 cubic centimetre suffices to neutralize .8 of the virus. The authors have treated two hundred and twenty unselected cases of diphtheria in children with the curative serum. The injections were never known to be harmful. At first a single injection equivalent to one hundred and thirty to two hundred immunity units was used, but later the dose was repeated in severe cases. Of the two hundred and twenty cases, sixty-seven were tracheotomized, the mortality being 44.9 per cent. Among the remaining one hundred and fifty-three, the mortality was only 23.6 per cent. In six treated on the first day, there was no death, and in sixty-six treated on the second day there were recoveries amounting to ninety-seven per cent., whereas as in twenty-three treated on the fifth day, the percentage of recoveries fell to 56.5 per cent. The steady decrease in the number of recoveries observed here, according to the time when the patient was first treated, is not seen under any method of treatment, whereas it is in keeping with the experimental evidence. In one-half the fatal cases, the disease was so advanced as to make recovery almost out of the question. In the other half, perhaps, several might have been saved if sufficient serum had been at hand to give several doses. Some children showed great improvement in the first two days, but eventually became slowly worse,

and died ten to fourteen days later of nephritis and especially of cardiac failure. With larger doses an effect on the temperature and pulse, critical in character, was mostly observed. Following their experience, the authors hope that the number of cases of nephritis and paralysis may be lessened. They conclude that (1) the serum should be used as soon as possible; (2) in slight cases two hundred units, but in severe as well as tracheotomized cases four hundred units should be given; and (3) the treatment should be repeated on the same or the following day, according to the severity of the symptoms; the total amount given may be five hundred to one thousand or fifteen hundred units. These figures apply only to the serum used by the authors.—*British Medical Journal*, May 5, 1894.

#### PHENACETIN IN RHEUMATISM.

According to the *Journal de Médecine de Paris* for April 29, 1894, useful results are obtained in cases of acute rheumatism by applying phenacetin externally to the painful parts. The following prescription may be used:

R Phenacetin, gr. lxxv;  
 Lanolin, ʒvi;  
 Olive oil, a sufficient quantity.  
 To be rubbed about the inflamed part.

Or,

R Phenacetin, gr. lxxv;  
 Alcohol, Oii.

In this solution dip compresses and apply to the painful parts.

#### TREATMENT OF DIABETES MELLITUS WITH SALICYLATE OF SODIUM.

DR. ADOLF MICHAELIS (*Therapeutische Monatshefte*, May, 1894) refers to others who have reported the use of salicylate of sodium in diabetes, and then reports a case.

The man was fifty-eight years old, of strong constitution, excellent appetite, and good digestion. Diabetes was discovered in 1877, and was possibly due to an injury to the back. Upon a diet that was not strict, which was undertaken only during a year's cure at Carlsbad, the percentage of sugar varied between one and four, the specific gravity from 1020 to 1036. Albumin, acetone or diacetic acid were never recognized. From the middle of September to November 23, 1890, he took daily 8 to 10 grains of salicylic acid for rheumatic disturbances. At the end of that time he developed a series of gastric and cerebral symptoms proved to be due to salicylic-acid poisoning. The urine was free from sugar; specific gravity, 1016. The salicylic acid was stopped, and the sugar

promptly reappeared, and varied, as before, according to diet, between one and four per cent. The patient was not under examination while taking the salicylic acid, so that one cannot say how long sugar had been absent.

#### WALNUT LEAVES IN SCROFULA.

G. P. RÓDIONOFF, of Moscow (*Méditsinskoie Obzrenie*, No 2, 1894), on the ground of extensive observations of five years' duration, recommends the old-fashioned popular treatment of scrofula by a prolonged course of a decoction of walnut leaves (*Folia nucis juglandis*), which should be used both internally and externally in the form of local washes and general baths, made two or three times weekly. Little children should be given half a cupful, older ones a cupful or even a "jugful" of the "tea" every morning and evening. The leaves prove especially beneficial in cases of itching, eruptions, and enlarged glands. In the author's hands the treatment, the duration of which varied from two months to two years, failed only in a few exceptionally refractory cases, and in impatient and unmanageable children who did not take the "tea" in a regular manner.—*British Medical Journal*, April 28, 1894.

#### A DEATH FROM BROMIDE OF ETHYL.

*L'Union Médicale*, May 8, 1894, states that MENDOZA reports a case of death following anæsthesia produced by bromide of ethyl. Ten seconds after the application of the compress to the face the patient's color became cyanotic and the veins turgescient, the eyes were moved convulsively, the pupils were widely dilated. Rhythmic tractions of the tongue and artificial respirations were practised thirty minutes and active flagellations resorted to without effect. The cause of death seemed to be respiratory failure.

#### THE TREATMENT OF NOCTURNAL ENURESIS.

DONALD MACALISTER, in the *Practitioner* for May, 1894, writes of this subject. He points out that patients suffering from this troublesome affection, which has proved rebellious to the ordinary methods of treatment, come not infrequently under the notice of the physician at the age of puberty. During childhood the complaint has been tolerated, and simple means of relief, disciplinary and other, have alone been tried. A little perfunctory medication,

or, it may be, such surgical treatment as circumcision or "cold sounding," is all that has been attempted, and yet the enuresis persists. As the little patient advances in age the disability becomes more urgent; and when the time comes for sending him or her to a boarding-school or away from home, the parents grow increasingly anxious to have the habit broken.

MacAlister in such cases, having first ascertained that no condition requiring surgical interference exists, uses atropine in doses gradually increased to the full limit of tolerance, and in no instance, out of some twenty cases, has he failed to bring about a cure. The following history illustrates the method adopted: A youth of fourteen had passed the examination for admission to a large public school, which he was to join in three months. From early childhood he had been accustomed to "wet the bed" twice or thrice a week. He had been treated from time to time by several practitioners, with ergot, tincture of belladonna in ro-minim doses, Parish's syrup, bromides, cauterization of the urethra with solution of nitrate of silver, blistering of the perineum, and ultimately circumcision. Each new treatment checked the enuresis for a time, but soon it recurred; and when coming under observation first it was as troublesome as ever. The house-master had informed the parents that he could not receive a boarder so affected, and they were in despair lest his infirmity should prevent his admission to the school and so spoil his career. They were eager to try anything in reason for his relief, and consequently carried out the directions given with praiseworthy care. The prescription ran thus:

R Liquoris atropinæ sulphatis, ʒiiss;  
Liquoris strychninæ hydrochloratis, m̄xlvi;  
Syrupi aurantii, ad ʒi.

Sig.—5 drops of the syrup to be taken in a tablespoonful of water at 9 P.M.; to be increased as directed.

The directions were: That no drink should be taken after 6 P.M., that the drops should be taken at 9, that the boy should go to bed after emptying the bladder at 10; that he should be waked to pass water at 12 when the parents retired, and again at 6 A.M. when the servants rose. 5 drops of the syrup were to be taken nightly for three nights, 10 drops for the next three, 15 for the next three, and so on until in the fourth week 30 drops were taken. During this time no "mishap" occurred; there was considerable dilatation of the pupils, and some dryness of the tongue and throat, but no untoward symptom. The dose was continued



at 30 drops for a week, when enuresis again took place. The dose was again increased every three nights by five drops at a time until 50 drops (representing about  $\frac{1}{10}$  grain of sulphate of atropine) were being taken nightly. Accommodation at this time was so affected that the boy could not see to write, though he was perfectly well in other respects. As at this point he had to enter for a two days' written examination, a solution of salicylate of eserine was instilled into the eyes, without stopping the atropine. This enabled him to see sufficiently well to take the examination and to pass with credit. As he and his parents had from previous experience been impressed with the notion that the third week of treatment was a critical one, and that at the end of six weeks a second relapse was to be feared, they were directed to continue increasing the dose up to 60 drops, and to continue this dose for a week. No "mishap," however, occurred, and the dose was then decreased ten drops every three nights, until, after nine weeks of treatment, it was discontinued; the enuresis never returned.

In other cases the writer has used gradually-increasing doses of the tincture of belladonna; but the uncertain strength of this preparation, and the large quantity that has to be taken to obtain its full physiological effect, have caused him to fall back upon sulphate of atropine as more eligible in every respect. In one patient, a girl of seventeen, he pushed the dosage up to 25 minims of the solution nightly, with ultimate success. In no instance have the secondary effects been at all alarming, or, indeed, more than slightly inconvenient. The patients themselves are usually so keenly anxious to be relieved of their infirmity that the inconveniences are cheerfully borne, when it is explained that they will pass off entirely when the medicine is stopped. Cerebral or cardiac disturbances have not been observed.

The secret of success in obstinate cases lies in courageous overdosing. If ordinary means have failed, atropine will not succeed, unless it is pushed to the utmost. The well-known tolerance of the drug by young patients should give the physician confidence in putting the subjects of enuresis under its full influence. The addition of strychnine to the mixture probably diminishes the depressant effect of large doses of atropine, and increases the sensitiveness of the vesical centres to reflexes from the bladder-walls. Some patients have said that, whereas they had been accustomed to wake only to find that the bladder had emptied itself spontaneously, they now were able to get up in time to pass water.

#### A NEW METHOD OF USING COCAINE FOR LOCAL ANÆSTHESIA.

KROGIUS (*Centralbl. f. Chir.*, No. 11, 1894) describes a new method of producing cocaine analgesia, which is based on the fact that when a solution of this agent is injected into the subcutaneous tissue near to a nerve-trunk it causes loss of sensation over a large zone corresponding to the peripheral distribution of this nerve. In order to reach the selected nerve-trunk with certainty, and to apply the cocaine to several of its branches at the same time, the author, in injecting the subcutaneous tissue, passes his needle across the long axis of the limb, and as the needle is thrust along the solution is gradually discharged. An injection made in this way across the root of a finger will, in the course of ten minutes, result in analgesia of the whole digit,—not of the skin only, but also of the tendons, the periosteum, and all the deep structures. If one or two injections be made transversely near the wrist, a considerable extent of the palm of the hand may be thus rendered analgesic. The sensibility of the ulnar side of the hand as far as the roots of the last two fingers may, it is stated, be abolished by injecting a solution of cocaine over the ulnar nerve at the back of the elbow. By injecting over both supraorbital notches, analgesia may be produced in the whole of the middle portion of the forehead. The analgesia caused by this method of using cocaine attains its greatest intensity and extent from five to ten minutes after the injection, and is maintained for a quarter of an hour or even longer. The author injects only a weak (two-per-cent.) solution of cocaine, and keeps the patient recumbent for at least a quarter of an hour after the operation. This method has been practised with success at Helsingfors in two hundred minor operations, such as amputation of the fingers and toes, excision of palmar fascia, and phimosis.—*British Medical Journal*, May 26, 1894.

#### RESECTION OF INGUINAL ARTIFICIAL ANUS.

MR. HERBERT ALLINGHAM showed a patient who had recovered from a previous operation, but all the motions were passing by the inguinal opening, and the spur about the opening was getting more prominent, in spite of an attempt to reduce it daily by pressure with the finger. This being the case, it appeared to him useless to attempt any plastic operation to close the artificial anus. The patient having been anesthetized, a sponge was first put into the artificial anus. The skin around the artifi-

cial anus was then divided, and the peritoneum opened as soon as the mass was entirely freed from the skin around; the anus and gut were next pulled well out of the abdomen. To do this it was necessary to separate some omentum from the gut, it having become adherent to it as a result of the fixing up of the gut to the opening in the belly-wall at the first operation. The sigmoid flexure having a fairly long mesentery, it was easily drawn well out of the belly. The abdominal cavity being well protected by sponges, two drainage-tubes were passed through the mesentery and secured with clip forceps around the gut about three inches above and below the artificial anus. About four inches of the gut with the anal opening in it were then cut away, a piece of the mesentery being also divided. A continuous silk suture was used to bring the mucous membrane of the upper end of the gut to the mucous membrane of the lower end of the divided gut. This suture was passed from one to the other very loosely all around. Then a Mayo Robson's bobbin was inserted between the loose stitches into both ends of the divided gut, and when well inserted the continuous stitch was drawn up tight, so bringing the mucous membrane of both ends of the gut firmly together over the bobbin, the bobbin acting as an excellent frame to keep the ends of the bowel together and also to allow of the careful insertion of Lembert's sutures, uniting the peritoneal surface of the upper to the lower end of the divided gut. A few sutures were then used to unite the cut in the mesentery. The bowel was then washed and returned, the abdominal wound being united with silkworm-gut suture in the usual manner.

It is satisfactory to note that the patient has made a perfect recovery and has left the hospital.—*Medical Press and Circular*, May 16, 1894.

#### THE TREATMENT OF LEAD-POISONING BY MONOSULPHATE OF SODIUM.

The *Journal de Médecine de Paris* for April 29, 1894, points out that PEYRON in 1891 stated that the monosulphate of sodium is an excellent drug to antidote the effects of acute lead-poisoning, for the reason that it aids very extraordinarily in the elimination of the lead from the organism. The experiments carried out by the investigator upon dogs proved this point beyond doubt.

#### MYXEDEMA AND THYROID EXTRACT.

CRARY, of New York, writes of this topic in the *American Journal of the Medical Sciences*

for April, 1894, and concludes that the effects of thyroid administration may be summed up as follows:

Increased metabolism, shown by,—

1. Elevation of temperature.
2. Increased appetite, with more complete absorption of nitrogenous foods.
3. Loss of weight, with nitrogen excreted in excess of that taken in the food.
4. Growth of skeleton in the very young.
5. Marked improvement in body nutrition generally.
6. Increased activity of mucous membranes, skin, and kidneys.

The rheumatic symptoms and the anæmia are not only not relieved, but are most frequently aggravated.

#### THE TREATMENT OF HABITUAL CONSTIPATION IN THE NEW-BORN.

The *Journal de Médecine de Paris* for April 22, 1894, gives the following directions for treating this condition:

Regulate the nursing; see that it is done every two or three hours. If the child is not nourished at the breast it may be necessary to feed it from the bottle, and under these circumstances cow's milk should be chosen which is very rich in cream. A small rectal injection of warm water may be given morning and night at the same hour, and if this is unsuccessful in producing a movement a small suppository of coca butter may be given, or a few drops of glycerin and water injected. It is also useful to use general massage over the abdomen with camphorated oil. A warm bath should be given every day, and the child should get as much fresh air as possible.

In somewhat older children care should be taken that the diet is regulated and that sweets are avoided, while vegetables, such as beans, prunes, and similar substances, are used. Injections or glycerin suppositories may be used once a day. Before each meal a teaspoonful of a syrup composed as follows may be given:

R Syrup of rhubarb,  
Syrup of gentian, of each,  $\mathfrak{z}\text{iv}$ .

Or in the morning a teaspoonful of the following prescription:

R Castor oil,  
Syrup of orange-flowers, of each,  $\mathfrak{z}\text{vi}$ .  
Shake well.

In addition, abdominal massage, baths, and out-door life are very useful.

[The disadvantage of employing either rhu-barb or castor oil is the fact that they both tend to produce constipation after making the bowels act. *Cascara sagrada cordial* would be a much better prescription, in the dose of from 1 to 3 teaspoonfuls.—ED.]

In still older children, in addition to regulating the diet, the child should be taught to eat slowly and masticate its food thoroughly, and in the morning to take a teaspoonful of the following mixture :

R Calcined magnesia,  
Sulphur,  
Cream of tartar, of each, ℥vi.  
Oil of anise, ℥xv.

Recourse may also be had to rectal injections and glycerin suppositories, or the following prescription may be given by rectal injection :

R Infusion of senna leaves, gr. lxxv to gr. cl;  
Water, ℥iv to ℥viii.

Should there evidently be marked atony of the liver, once or twice a week a powder composed of calomel and scammony, of each 4 to 6 grains in a small cachet or in syrup, may be used. In still other cases, before the evening meal, a pilule containing  $\frac{1}{16}$  to  $\frac{1}{8}$  grain of podophyllin may be administered. Where there is insufficient intestinal secretion, citrate of magnesium may be given once a week, or a small wineglassful of some purgative mineral water. Should there be inactivity of the intestine, 8 to 12 drops of the following prescription may be used :

R Tincture of nux vomica, ℥xxx;  
Tincture of belladonna,  
Fluid extract of cascara sagrada, of each, ℥ii.

Hydrotherapy, exercise, massage, and electricity with faradization of the abdominal walls and the use of the continuous electric current are also valuable therapeutic aids. Should there be evidences of intestinal obstruction, with stercoraceous vomiting, with constipation, meteorism, and a cylindrical tumor showing obstruction, the child should have a hot bath, after this copious intestinal irrigation of hot boric-acid solution, to which is added 1 or 2 teaspoonfuls of glycerin, and if the obstruction does not seem to be severe, 2 to 6 drachms of castor oil. A liquid diet, consisting chiefly of milk flavored with coffee, is to be used.

#### COMPOUND TINCTURE OF COAL-TAR.

In the *American Journal of the Medical Sciences* for April, 1894, DUHRING writes a paper on compound tincture of coal-tar.

Summing up the result of his investigations, we may conclude,—

1. That the best tincture of coal-tar is made with the aid of tincture of quillaia.
2. That the strength of the tincture of quillaia should be 1 to 4, with ninety-five per cent. alcohol.
3. That the coal-tar (1 part) should be digested with the tincture of quillaia (6 parts), with frequent agitation, for not less than eight days, and preferably for a longer period, and finally filtered.
4. The resultant product is a brown-black, clear tincture, which, upon the addition of water, forms a cleanly yellowish emulsion, the color and certain other characters varying with the kind of coal-tar employed.
5. The tincture is stimulating and is prescribed usually largely diluted, with from 10 to 60 parts of water, as a wash, and is useful where tar is indicated, as in certain forms of eczema, psoriasis, pruritus, and other inflammatory diseases of the skin. It is often more useful when employed weak than strong.
6. This preparation, which may be designated as "compound tincture of coal-tar," takes the place of several similarly composed proprietary preparations, known as "liquor carbonis detergens" and "coal-tar saponine."

#### PRESCRIPTIONS.

For whooping-cough in an infant :

R Sulphonal, gr. i;  
Creosoti, ℥ii;  
Syrupi tolutani,  
Aque, of each, ℥ii.  
Misce et fiat mistura.

2 teaspoonfuls to be given every two hours.

For amenorrhœa :

R Hydrargyri perchloridi, gr.  $\frac{1}{4}$ ;  
Sodii arseniatis, gr. i;  
Ferri sulphatis exsiccatae, gr. xxx;  
Potassii carbonatis, gr. xv;  
Extracti nucis vomicae, gr. v.  
Misce et divide in pilulas xxx.  
1 pill to be taken before each meal.

For bronchorrhœa :

R Copaiba, ℥iii;  
Spiritus chloroformi, ℥i;  
Mucilaginis acaciae, ℥vii;  
Liquoris potassae, ℥i;  
Aque cinnamomi, q. s. ad ℥viii.  
Misce et fiat mistura.

An eighth part to be taken three times daily.

For bronchitic asthma :

- R Extracti stramonii, gr.  $\frac{1}{8}$ ;  
Potassii iodidi, gr. v;  
Ammonii carbonatis, gr. iv;  
Tincturæ lobeliae ætheræ,  $\mathfrak{M}$  v;  
Aquæ chloroformi, q. s. ad  $\mathfrak{Z}$ ss.  
Misce et fiat mistura.

A tablespoonful every four to six hours.

Paste for eczema :

- R Acidi salicylici,  $\mathfrak{z}$ i;  
Zinci oxidi,  $\mathfrak{z}$ iii;  
Pulveris amyli,  $\mathfrak{z}$ iv;  
Adipis lanæ hydrosi,  $\mathfrak{z}$ i. M.  
Fiat unguentum.  
To be applied daily.

—*Practitioner*, June, 1894.

#### POISONING BY GUAIACOL.

FRIEDENWALD writes in the *Maryland Medical Journal* for May 12, 1894, that the external application of guaiacol for the reduction of febrile conditions has been given a prominent place in recent medical journalism. It is important, therefore, to direct attention to the toxic symptoms in the first fatal case of guaiacol-poisoning.

Professor Oscar Wyss, of Zurich, reports in the *Deutsche Medicinische Wochenschrift* of March 28, 1894, the case of a girl nine years of age, who had been accidentally given 5 cubic centimetres (75 drops) of guaiacol. In a short time she became unconscious; the conjunctivæ became injected, the corneal reflexes diminished, and the pupils no longer reacted to light; there were frequent attempts at vomiting, and the saliva flowed from the mouth in large quantities. The pulse became rapid, the sensibility of the skin much diminished. Finally, the patient began to vomit; the physician detected the odor of guaiacol. The stomach was washed out, but she did not rally. The cyanosis gradually diminished, and instead of it a deadly pallor was observed; the respiration became frequent. Three and a half hours after the guaiacol had been swallowed the patient passed one hundred cubic centimetres of brownish-red urine.

The spleen and liver soon enlarged, and the temperature fell to 35.5° C. (96° F.), and small hemorrhages were observed upon the skin of the arms and legs. The urine contained albumin, blood, and casts, and Ehrlich's carbolic-acid test was positive.

Jaundice soon appeared, the stupor increased, and the patient died on the third day.

The autopsy revealed an acute gastritis and

enteritis, parenchymatous degeneration of the liver, acute hemorrhagic nephritis, parenchymatous degeneration of the heart-muscle, and ecchymoses in the pleura, peritoneum, endocardium, and pericardium; the spleen was much enlarged.

Kobert, in his text-book on "Intoxicationen," points out that after 1-gramme (15 drops) doses of guaiacol slight appearances of poisoning may supervene. These are characterized by a burning feeling in the stomach, nausea, etc. In one case, in which fifteen grammes (3 $\frac{3}{4}$  drachms) were accidentally taken by a patient in the Dorpat Clinic, the stomach was immediately washed out and the patient was rescued. However, unconsciousness set in, the pupils became contracted, the breathing irregular, and the intensely dark appearance of the urine was very noticeable.

#### SODIUM NITRITE AS A THERAPEUTIC AGENT.

In a valuable paper on this subject in the *Practitioner* for May, 1894, SHARP reaches the following conclusions :

Sodium nitrite, being stable, may replace the less stable amyl and ethyl nitrites. It dilates all the arterioles rapidly, and so rapidly relieves the heart. Disagreeable symptoms may be overcome by prescribing it with ammonia water or spirit of chloroform and small doses of morphine. It is most useful in anginal affections and in irregular heart action. To obtain most benefit from its use it should be continued some time after all symptoms have passed off; by this means the heart is able to regain its tone and so to repair itself. The maximum dose is 4 or, at most, 5 grains, and generally 1 or 2 grains are enough. Graves's disease would appear to be aggravated by it. Bronchitis and asthma are not, in Sharp's experience, benefited by its use.

#### PEPSIN LAVEMENTS IN DYSENTERY.

Pepsin has been applied to very many of the diseases of the nosology, yet it remained for DR. SUMMERS, of Waukesha, Wis., to discover that it possesses a most satisfactory therapeutic action in dysentery. He washes out the bowel with a strong solution of pepsin ( $\frac{1}{2}$  ounce to 6 ounces of warm water) every three hours, which act, he declares, "clears off the mucous surface effectually." He next employs a soothing injection, such as laudanum and starch, as hot as can be borne. He declares that after two or three washings and injections the patient experiences great relief, and healthy action is at

once set up, when, if constitutional conditions receive due consideration, rapid healing follows.—*Medical Age*, May 10, 1894.

#### RECTAL ULCERATIONS.

SPECHT has an article on this subject in the *Northwestern Lancet* for May 1, 1894.

In describing the treatment of rectal ulcerations, the author divides them into two classes: first, those which come under the influence of the sphincter area; and, second, those above it in the rectum. The former are generally met with in the form of painful fissures and excoriations, the pain being most pronounced during the passage of the feces over the sore, or some little time after when produced by spasm. In the former variety the patient should come daily to the office for treatment, with, in some cases, a weak solution of silver nitrate, in others a 30- to 60-grain solution, up to even a saturated solution for caustic effect. Sometimes a mixture of equal parts of carbolic acid and tincture of iodine is useful. Most cases are easily cured by this plan of treatment, if the bowels are kept in as liquid a condition as possible, the patient having at least two or three passages a day, thereby causing less irritation of the sore. Another good local treatment in some of these cases is to lay a pledget of absorbent cotton, dusted with iodoform, in the bottom of the sore, and change it daily.

When this fails, and we have a persistent, irritable ulcer, division of the sphincter is the next procedure we would think of, and, as Kelsey says in regard to this operation, we do not need to cut entirely through the sphincter; still, we should go deep enough to produce a certain amount of laxity about the ulcer.

And now we come to the treatment of ulcers farther up the rectum, the ones the most tedious and difficult to heal.

Before attempting to treat this class of cases the writer obtains the co-operation of the patient by consenting to absolute rest in bed and in the horizontal position; no sitting up in bed or about the room or on a lounge, but in bed, with the hips lower than the shoulders, if possible.

To show the value of this position in bed in the cure of the latter class of rectal ulcerations, an ulcer of the leg is a fair example, where the veins are in a varicose condition, as they are apt to be likewise in the rectum. In such an ulcer on a leg in that condition we all know how difficult it is to heal it unless we bandage the limb or place it in a horizontal position; washes, powders, and ointments are without

avail unless we do this. So it is with the rectum. Although we cannot bandage it, we can do the better way, and that is to place the rectum, like the leg, in a horizontal position. We thus relieve the enlargement of the veins, and thereby allow a quicker and more abundant supply of the life-giving current of arterial blood; still more, the current is aided by giving 2 or 3 grains of opium a day internally. Opium is a good capillary stimulant, and thereby a great factor in the healing of sores. We can assist still more by giving a highly nutritious diet, mostly liquid, however, with the exception, possibly, of bread and crackers. Add to this the food tonics, cod-liver oil, iron, and strychnine, and you are certainly assisting nature to the utmost.

The opium aids the patient to rest more contentedly in bed, and although it binds up the bowels, they naturally under this absorbable diet do not move under two or three days, and what harm if we prolong it a day or two longer with the opium? Of course the bowels should not be locked up longer than the time when uneasiness is expressed by the patient, but we can then, by leaving off the opium for a period, and by the administration of oft-repeated doses in conjunction with an enema, soon have a comfortable passage. A good local medicine, and the one with which the author has had the best success, is a mixture of aristol and ichthyol made into an ointment and applied with an ointment applicator, or more convenient for the patient's use is to have the medicine made into suitable suppositories.

#### THE BEST TREATMENT OF HEMORRHOIDS.

STEVENS contributes a paper on this subject to the *Cincinnati Lancet and Clinic* for May 12, 1894. He thinks that internal hemorrhoidal tumors are best treated by direct removal. There are several methods proposed for the accomplishment of this. With the idea before us that the practitioner is to treat his cases without special preparation, because he does not see them often, the best method is that by ligature. Its advantages are that it is certain, and, if properly performed, safe; its disadvantages are mainly two. Sometimes, but not always, more or less distress, sometimes great pain even, is felt for a few days, and after this operation a patient is confined to bed some days.

The only instruments necessary are a pair of forceps, a pair of scissors, and a strong ligature. The improved method of Allingham is the one to employ. This contemplates the partial dis-

section of the base of the tumor towards the vessels which enter it from above. The operation should be done under an anæsthetic, with the sphincter stretched. The ligature is tied in the groove made by dissection around the pedicle thus formed and cut short. It comes away in about a week, and at the end of a second week the patient is usually at liberty. But before deciding upon this latter point, personally examine the former sites of the tumors. All patients do not get well rapidly; their cicatrizing power is feeble.

If the cases seen by the practitioner are sufficiently numerous to justify him in providing himself with the necessary instruments, he will find the clamp and cautery method of treatment an ideal one, and it has not been intended to prefer the ligature to it without some qualification of the statement of preference. While not so simple of performance, it is followed by less distress, and recovery is usually more speedy after it than after the ligature. The surgeon who permits his patients to walk out on the fourth day, however, as has been reported, does not decide for their best interest. A week or ten days should elapse, unless an examination shows the wounds healed. If resorted to, two or three precautions are best heeded. Do not use it on tumors high up in the rectum. Open the clamp slowly, and if there is any tendency to bleed, screw up the clamp and again apply the cautery. The cautery is sufficiently hot when dull red, and the part of the stump to which particular attention should be paid in applying the cautery is that farthest from the operator,—i.e., where the vessels enter.

Before either operation see that the bowels are thoroughly emptied, and after it introduce an opium suppository.

There are one or two other methods advised, but they are not all that could be desired. One of them, called after the name of an eminent English surgeon, consisting in excision of the "whole of the pile-producing areas," deserves to be forgotten, not because it is not simple, but because it is not safe.

A form of hemorrhoidal disease characterized by sessile granulations which bleed easily is best treated by the very old method of applying nitric acid. Introduce a speculum, dry the parts with gauze, and touch the whole granular surface again and again with a bit of cotton moistened with the acid, but containing so little that it will not run over the parts not diseased.

Lastly, before beginning any treatment, look out for complications. Especially in women

should the pelvic organs other than the rectum be examined. In children examine the urinary organs.

#### THE USE OF GLYCERIN IN HEPATIC COLIC.

*L'Union Médicale* for May 8, 1894, states that FERRAND reports the favorable results obtained by him in the treatment of hepatic colic by glycerin. The glycerin is administered by the stomach, and he believes is rapidly taken to the hepatic vessels. He believes it exercises a distinct cholagogue influence and tends to prevent hepatic colic. Should an attack of colic appear, a relatively large dose—namely, from  $\frac{1}{2}$  to 1 ounce of glycerin—should be administered. Ordinarily 1 to 3 drachms of glycerin each day, taken with some alkaline water, is quite sufficient to prevent future attacks.

#### AN OINTMENT FOR RHEUMATIC JOINTS.

The *Journal de Médecine de Paris* for May 6, 1894, states that BOURGET (of Lausanne) uses the following prescription about inflamed rheumatic joints:

R Salicylic acid,  $\mathfrak{z}$ iii;  
 Lanolin,  $\mathfrak{z}$ iii;  
 Oil of turpentine,  $\mathfrak{z}$ iii;  
 Lard,  $\mathfrak{z}$ iii.

On the application of this salve, Bourget claims that the pain is rapidly diminished, and he also thinks that a sufficient quantity of the salicylic acid is absorbed to produce a therapeutic influence.

#### THE TREATMENT OF DIPHTHERIA.

The *New York Medical Journal* for June 9, 1894, discusses this subject editorially by taking for its text an article in the *Journal des Sciences Médicales de Lille* for February 10, in which there is an analytical review, by DR. G. LEMIERRE, of various recent contributions to the periodical literature of the treatment of diphtheria. The writer begins with the self-evident statement that the number of new methods which are vaunted from time to time marks a lack of any really efficacious treatment of the disease, although there are many of these methods which, if we may believe their authors, produce marvellous results. He thus proceeds to summarize the treatments relied on by various writers whose publications he takes into account. Hübner, he says, paints the affected part two or three times a day, according to the

severity of the case, with tincture of chloride of iron diluted with from one to five times its bulk of water; then he washes the throat with lime-water and applies externally iced compresses, together with pieces of ice. Theoretically, tincture of chloride of iron is as powerfully antiseptic as corrosive sublimate, in so far as the micro-organisms of diphtheria are concerned; according to Loeffler, it kills them instantly in a solution of 1 to 125. Moreover, its use does not involve any danger of poisoning. In fifty-two cases treated in this way, only twice did death result, and in the cases of recovery the gravity of the disease was such in six of them that the author does not hesitate to conclude that death would have supervened under any other treatment. Rosenthal gives chloride of iron internally, in a two-per-cent. solution, with the addition of glycerin, from a teaspoonful to a dessertspoonful every hour, day and night. He thinks the measure unailing in preventing the angina from extending to the larynx. The temperature falls within twenty-four hours, the pulse becomes normal, the general condition is good, the pain is diminished, and the appetite is increased. In seventy-nine cases thus treated, only seven children died. Braun also uses sesquichloride of iron, but he is of the opinion that internal treatment alone is not enough. In order to destroy the false membranes more surely and more rapidly, we should not employ a solution, but an ointment, consisting of ten parts of sesquichloride of iron and twenty parts of lanolin ointment. Two applications in the course of the day often suffice, but occasionally three are necessary. Amelioration commonly shows itself within the first twenty-four hours, and at the end of three days the disease is jugulated. While with the ordinary methods of treatment he had observed forty per cent. of deaths, he witnessed only a few with this new method.

Hornig paints the throat two or three times a day with a thirty-per-cent. watery solution of pyoktanin, and then directs the patient to take a drink at once, but not to gargle. In children it is well to avoid as much as possible allowing them to expectorate after the painting, so they should be left in bed and not carried in the arms, with the head low and the legs raised, which favors the expulsion of the pyoktanin and hinders its absorption. The drug acts slowly and counteracts the poison already formed in the system. When the disease invades the nasal passages, he applies cotton tampons imbued with the same solution. He reports one hundred and forty cases thus

treated; one hundred and ten observed by himself terminated favorably.

Tullé touches the false membrane every three hours with cotton tampons impregnated with a 1-to-500 solution of corrosive sublimate slightly acidulated with tartaric acid. He remarks that it is useless to seek to remove the false membrane, for it becomes detached spontaneously on the third or fourth day. At the same time he administers regularly every half-hour  $\frac{1}{10}$  grain of calomel, a grain of sodium bicarbonate, and  $\frac{3}{8}$  grain of ipecac until an abundant action of the bowels is produced, and thereafter repeats the dose every two hours. Besides, he gives quinine sulphate, calcium chloride, calcium citrate, and iodide of iron, in varying proportion, according to the patient's age. With this treatment he reports the loss of only two children out of thirty-three.

Pilière sprays the pharynx every two hours during the day and every three hours at night with a 1-to-500 solution of corrosive sublimate in children over two years old, and with a 1-to-1000 solution in those that are younger. He has never observed any symptoms of mercurial poisoning. He raises the pharyngeal false membranes after touching them with a tampon of absorbent cotton soaked in a 1-to-30 solution of nitrate of silver. Out of ninety-eight cases, in six of which tracheotomy was required, ninety-four ended in recovery.

Wissing employs inhalations of turpentine. He causes water to be boiled day and night in the sick-room, and adds turpentine to the water, using about six ounces in the course of a day. He also makes the patient inhale the mixed vapor directly, and says that in thirty-six hours the false membrane disappears and that poisoning never occurs. Flahaut paints the false membrane every hour or two with petroleum, taking care not to use enough of the liquid for it to trickle into the larynx. Immediately after this procedure he removes the false membrane, which seems to have become detached and dissolved under the action of the petroleum. Forty cases thus treated all terminated favorably, while in the same epidemic thirty cases treated by him according to the ordinary methods resulted in twenty-one recoveries and nine deaths.

#### A PRESCRIPTION FOR HEPATIC COLIC.

The *Journal de Médecine de Paris* for May 6, 1894, recommends that poultices containing medicinal ingredients be employed, as,—

R Turpentine, ℥iii;  
Chloroform, ℥iii;  
Laudanum, ℥vi.

This should be applied over the liver.

Or that a compress of flannel wrung in water and medicated with 10 or 20 drops of chloroform be applied in its place. Every half-hour the following mixture may be given :

R Antipyrin, gr. vii to gr. xv;  
Chloroform water, ℥i;  
Cinnamon water, ℥iii;  
Hoffmann's anodyne, ℥i;  
Tincture of belladonna, gtt. x;  
Tincture of orange, ℥ii.  
To be taken at a dose.

If this mixture be vomited, the patient may be given by inhalation a little ether or chloroform, and the following injection administered by the rectum :

R Chloral, gr. vii to gr. xv;  
Wine of opium, gtt. i to gtt. iv;  
Distilled water, ℥i.

A tenth to a quarter of a grain of hydrochlorate of morphine should be given hypodermically. In the course of an hour a small glass of milk, to which has been added two to four drachms of oil or glycerin, may be added, which should be followed in turn by a full purgative dose of castor oil. Between the attacks it is well to administer full doses of bicarbonate of sodium, to order bitter tonics, and to give a mixture containing ether and turpentine, which are supposed to exercise antilithic effects. A useful prescription to take in the morning early is one composed of sublimed sulphur, cream of tartar, magnesia, of each, six drachms; oil of anise, fifteen drops. Or small pills of podophyllin containing one twelfth to one-eighth of a grain may be administered. Large rectal injections of cold water are also of value. Twice a week it is well to give one to two ounces of olive oil flavored with some peppermint for the purpose of aiding in the expulsion of any small stones. The articles of food which are permitted are milk, cream and custards, bouillon, vegetable soup, eggs, small quantities of meat, particularly chicken and veal, potatoes, boiled fish, bread in small quantities, dry white wine, and any effervescing alkaline mineral water. The articles of diet which are to be forbidden are butter and fats of all kinds, pork, mushrooms, pastries, confections, peas, all sorts of greasy foods, carrots, asparagus, tomatoes, all fruits containing much sugar, all liquors, coffee, tea, strong beers, and strong alcoholic drinks in general. A similar prescrip-

tion to that already given which contains antipyrin is also useful in nephritic colic, according to this article.

#### OBSERVATIONS ON NOSE-BLEED AND ITS TREATMENT.

KOHN, of New York, contributes an article on epistaxis to the *Medical Record* of June 9, 1894, and thinks that in considering the treatment, in view of the etiology, it is proper to consider, first, prevention, and, secondly, the means for causing the cessation of the bleeding.

In the case of a patient giving a history of repeated bleedings without any sufficient exciting cause, a most searching examination of the nose and naso-pharynx is essential; if an erosion or varicosity be found, as it frequently is, on the lower anterior portion of the cartilaginous septum, this should first be dried with absorbent cotton and then cauterized with a saturated solution of chromic acid, as advised by Bosworth and Bresgen. Chiari claims to have found such a lesion in seventy out of eighty-one cases of habitual nose-bleed, and advises the galvano-cautery beyond all other measures. The writer has seen the galvano-cautery cause nose-bleed so frequently that he hesitates to recommend it in these cases to the general practitioner. Angiomatous growths have been the cause, in some cases, of such profuse and repeated hemorrhages as to bring the patient to the verge of syncope; their radical destruction by the flat galvano-cautery is effectual in checking the recurrence of bleeding. Tumors, vascular polypi, adenoid vegetations, enlarged tonsils, if found in a patient suffering from habitual nose-bleed, must be removed.

If the child be a "mouth-breather," attention should be directed to the naso-pharynx and the adenoids, which in all probability will be found removed. Under prevention, the treatment of the generation conditions named under etiology must be considered,—viz., anæmia, chlorosis, hæmophilia, diseases of the heart, lungs, pleuræ, parenchymatous organs, etc., into which it is not the province of the writer to enter. It is mentioned for the purpose of emphasizing the necessity for a thorough physical examination of every patient suffering from nose-bleed. Suffice it to say, that if habitual constipation exist, the bowels should be regulated by mild salines; that in an enfeebled state of the system, iron, quinine, strychnine, the mineral acids, cod-liver oil, may be administered according to the indications. Fresh air, exercise in the open air, and bathing, either in fresh or salt water, are to be commended in



patients who are debilitated by repeated bleedings.

As has been mentioned under the etiology, there are still left, however, some cases in which the bleeding occurs spontaneously, without any lesion being discoverable. These occur more especially in growing children, who otherwise are in good health. Ergot has been recommended as a preventive in these cases by Morell Mackenzie. The writer has found in the fluid extract of *hydrastis canadensis* a sovereign remedy in these cases; he has had occasion to use it in a large number of cases of nose-bleed in the German Poliklinik, and has found it efficacious in preventing a recurrence in a large majority of cases. It is administered internally in 10-drop doses, in water, every two or three hours. This apparently simple treatment can be recommended with confidence in the cases above mentioned. The alkaloid hydrastinin, in the form of a hydrochlorate, has been put up in tablet form in  $\frac{1}{10}$  grain doses, and in combination with ergotin, and is a most elegant method of dispensing the drug. The *hydrastis* is prescribed, be it understood, as a preventive for the patient who at the time of his visit is not bleeding from the nose, but who gives a history of repeated bleedings. A five-per-cent. solution of the fluid extract of *hydrastis* in water may be used as a spray for the nose; it may also be used with liquid vaseline, albolene, or kindred preparations, as a spray or brushed into the nose. The drug seems to "tone" the mucous membrane, and by reason of its containing a bitter principle it has, when taken internally, a beneficial effect on the stomach, as is attested by the improved appetite following its use. Its only drawback is, that it has a tendency to cause constipation, but this may be combated by mild salines.

The thorough examination of the nose and naso-pharynx for a local lesion to account for the bleeding is not the less necessary because of the use of *hydrastis* or any other remedy which may produce a cessation of the bleeding for the time being; for, if an erosion or vascular growth be the source of the hemorrhage, the only rational course is to attack it locally. It is not always possible to find such a lesion, nor have we at all times the instruments with us for making a thorough examination. In these instances the fluid extract of *hydrastis* will be found a most reliable remedy temporarily.

Under the heading of prevention should be considered also the general laws of hygiene,—pure air in school- and sleeping-rooms, bathing, assimilable food, etc.,—to which it is unnecessary to call your attention.

So many different methods of checking an attack of nose-bleed have been recommended that a review of them will be in place before the writer describes the simple procedure which he has in most cases found satisfactory. The various methods of treatment which have been recommended may be divided into (1) non-medicinal and (2) medicinal.

Non-medicinal methods are: 1. External compression upon the bleeding nostril either by the fingers, iced cloths, ice-bags, or ice. 2. The hot nasal douche, the water having a temperature of 90° F., injected until it emerges from the non-bleeding nostril unmixed with blood. 3. Ice in the mouth, cold cloths, ice, cold metals applied to the spine, immersing the scrotum in iced water. 4. Chapman's bags, containing water at a temperature of 105° F., to the spine. 5. Cups or blisters to the hepatic or renal regions; mustard plasters to any part of the body or extremities for producing counter-irritation.

Medicinal treatment may be by: 1. Astringents in form of powder, insufflated, applied with brush or by means of the spray,—viz., the preparations of iron, the muriated tincture, Monsel's solution, diluted with glycerin; glycerite of tannin, solutions of sulphate of zinc, acetate of lead, sulphate of copper, kino, catechu. 2. Escharotics and caustics. In order to properly apply these, the blood must be rapidly touched off with pledgets of absorbent cotton or lint, so as to expose the bleeding point to view; this may then be touched with a saturated solution of chromic acid, a sixty-per-cent. solution of nitrate of silver, or a crystal of this salt may be fused on a silver probe and be thus applied; nitric acid (which must be used with great care), or the galvanocautery.

Finally, internal compression has been recommended:

1. By means of absorbent cotton pledgets, introduced into the nostril until the bleeding ceases; the number of pledgets should be counted, so that none are left behind when they are removed; or they may be connected by a strong thread, which simplifies their removal; they may be saturated with astringents in solution,—i.e., tannin, acetate of lead, sulphate of copper, etc.

2. By means of long, narrow strips of iodoform gauze, gently introduced into the bleeding nostril until this is entirely occluded, leaving the end of each strip visible at the anterior nares.

3. By means of small rubber bags, on the principle of Barnes's dilators, introduced into

the nostril empty, and then inflated with air or filled with cold water.

Finally, plugging of the posterior nares with Bellocq's canula; this should be the *dernier ressort*, and under no circumstances should be tried unless all other means fail, as it is itself not devoid of danger; cases of erysipelas, gangrene, sepsis, and even tetanus have been reported as following its use.

The writer recalls the case of a man whom he saw one week after the posterior nares had been plugged; the physician who had introduced the tampon could not remove it, it had become so tightly wedged, and was so fetid that the patient suffered from infection, and said he preferred the bleeding to the treatment. It was with difficulty that the plug was finally removed.

A twenty-per-cent. solution of antipyrin, a ten-per-cent. solution of cocaine, applied by means of cotton pledgets, which are allowed to remain *in situ*, have also been recommended as reliable remedies to stop the bleeding.

The various methods above mentioned certainly form an imposing array.

It has seemed to the writer that the simple rules for the stoppage of capillary hemorrhage are applicable to these cases; the object is, as in hemorrhage, to secure coagulation at the point of bleeding and to keep the clot in place.

The first rule, therefore, is to place the patient, and more especially the bleeding part, at rest; nervousness or fright should be quieted with assurances that there is absolutely no danger; the patient should sit upright in a chair, the head thrown slightly backward; all bands about the neck should be loosened, in order that the circulation may be unimpeded; the patient should then open the mouth as widely as possible, and should breathe through the mouth only; breathing through the nose should be entirely suspended until bleeding ceases, and should be superseded by oral breathing; blowing the nose, hawking, and spitting must be strictly interdicted; we all know how prone patients suffering from nose-bleed are to do these things. In following the instructions thus far given, the interior of the nose is placed at rest and the first indication is fulfilled; whereas, if the patient snuff up cold water, wipe or blow the nose, he displaces clots and favors the continuance of the hemorrhage.

The second rule is to tell the patient, his mouth being kept wide open, to breathe more deeply and more rapidly than he normally does; the respiration may be increased to 30

per minute; the immediate effect of this increased oxygen supply is to increase the force and frequency of the heart's action, and presumably to increase the amount of blood in the pulmonic circulation at the expense of the cerebral; whether it be due to the more thorough equalization of the blood-supply to the body and head, or to the increased muscular action incident to the increased respiratory effort, it has seemed to the writer that the nasal mucous membrane is depleted to some extent by this procedure.

The use of opium and digitalis in hæmoptysis is to a certain extent attended by the same result here obtained,—viz., a more powerful contraction of the heart-muscle.

As soon as the patient tires of the rapid breathing—which he does very soon, perhaps after thirty respirations—he may breathe normally for a few moments, when, if the bleeding has not ceased, he is told to breathe rapidly again; the mouth is to be kept open constantly, and any blood flowing into the pharynx is to be swallowed.

The fact that blood is withdrawn from the brain by this procedure is attested, in the opinion of the writer, by the dizziness which most patients experience when they resort to it, and by the pallor which the face assumes; the same symptoms have been noted by every physician during prolonged auscultatory examinations of the chest; some patients are apt to faint during such examinations; it seems to the writer that a temporary anæmia of the brain is the cause of the phenomena.

The final rule is to tell the patient to enunciate the broad vowel "A" with each expiration; the soft palate is thus brought in contact with the posterior wall of the pharynx during each expiration, the posterior nares are separated from the pharynx, and the blood is prevented from flowing into the œsophagus during the expiratory periods.

The three principal factors in this simple method of arresting nose-bleed are: first, to place the nose at rest by suspending breathing through it; second, rapid and profound respiration, acting as a respiratory and cardiac stimulant, more equally distributing the blood throughout the systemic and pulmonary circulation by abstracting it from the head; and, third, the occlusion of the posterior nares during the entire expiratory period by the intonation of the broad vowel "A" during expiration.

This method is so easily applicable that after every operation in the nose attended by bleeding the writer makes use of it; it is so much

cleaner and simpler after the snaring of a vascular polyp or the removal of an exostosis to make use of this procedure than to apply astringents that interfere with the field of operation, that it is invariably tried by the writer before any other means are applied. Of course it may in some cases of severe bleeding from a larger vessel fail; in these I would then try first the insufflation of tannin, and if this fail, the tamponing of the nostril with long, narrow strips of iodoform gauze, dipped in the glycerite of tannin, with the ends hanging out of the nostril. It is needless to dwell on the advantages of a method of arresting nasal hemorrhage in which no drugs or instruments of any kind are necessary. A few weeks ago the writer had occasion to see a severe attack of nose-bleed occur during the course of typhoid fever; had he been compelled to send to his office for instruments, drugs, etc., the patient might have succumbed in the mean time; the simple method above described had the effect of arresting the bleeding at once.

Astringents in reality cannot cope with a severe nasal hemorrhage, as the clot formed by most of them, especially the preparations of iron, does not extend down to the bleeding-point; they induce superficial coagulation, and some of them produce such a dirty, grumous compound that the field is obscured, and even though the bleeding stop, the patient feels extremely uncomfortable.

#### AN INJECTION IN DYSENTERY.

R Boric acid, ℥ss;  
Tannic acid, gr. xlv;  
Tincture of opium, gtt. xv;  
Water, Oi.

To be given after a dose of castor oil for the purpose of washing out the bowel.

#### COLLODION FOR RHEUMATISM.

The following prescription is recommended by the *Journal de Médecine de Paris* for May 6, 1894:

R Salol,  
Ether, of each, 4 parts;  
Collodion, 30 parts.

To be painted about the painful and inflamed joint.

#### PIGMENTATION OF THE SKIN DURING EXHIBITION OF ARSENIC.

M. RICHARDIÈRE (*Medical Press and Circular*, May 30, 1894), showed a patient in whom Fowler's solution, administered during only

four weeks, had caused a very marked brown pigmentation of the skin. The doses had been gradually increased, and the pigmentation displayed itself on the eighteenth day. In a few days it became well marked. It affected the skin only, not the mucous membranes. It was much more marked in some regions than others. These were the axilla, the neck, the dorsal aspect of the fingers and toes. There existed also a large number of pigmented lenticular spots, which appeared at parts where the skin had been previously bitten by insects or wounded in similar ways.

#### VARICOCELE: NEW WAY OF TYING THE VEINS.

In operating on a patient for varicocèle, Mr. MACREADY employed a method for ligaturing the veins which has been suggested by Dr. Malcolm, the anæsthetist of the hospital. The operation was performed by an incision just above the external ring, going up towards the internal ring. Mr. Macready next isolated the vas, which was held out of the way, and then freed the enlarged vein; this was then held up in the form of an inverted V, a loop of silk was passed under the V, then (after being opened) over the instrument holding up the V, and down each side of it, one free end of the silk being next passed through the loop, and both free ends securely tied, thus forming the Staffordshire knot; the portion of veins above the ligature forming the apex of the V was then cut off, and the whole wound closed. By this method the cut ends of the veins are securely attached without further ligature. The advantages claimed by this process are, that one ligature and one knot are used instead of the two ligatures and the three knots of the ordinary method of ligaturing the veins in two places, cutting away the intermediate portion, and tying the two ligatures; also that the testicle is well and thoroughly drawn up.—*Medical Press and Circular*, May 16, 1894.

#### REPORT OF THE COLLECTIVE INVESTIGATION COMMITTEE ON ANÆSTHESIA AT THE RECENT SURGICAL CONGRESS IN BERLIN.

PROFESSOR GURLT, Berlin, in presenting the report of the committee on anæsthesia, said that, on the proposition of the Society, he had carried out the investigation to a fourth year. In 1893, 63 reports had been received, of which 9 were from abroad. Fifteen reports had been sent from 21 German university clinics. The

total of last year's cases was 51,846. Of these, 32,723 were chloroform administrations, 11,617 of ether, 3896 with ether and chloroform, 750 with chloroform, ether, and alcohol (Billroth's mixture), 2769 with bromide of ethyl, 91 with nitrous oxide. The total fatalities were 20, and of these, 17 were due to chloroform. The average death-rate was 1 in 2587 administrations. The death-rate from chloroform was 1 in 1924. When the results of the previous year were added, the totals were 163,493 administrations, with 61 deaths. The rate of mortality was: chloroform, 1 in 2655; chloroform and ether, 1 in 8014; Billroth's mixture, 1 in 26,268. In fact, only 1 death had occurred from ether narcosis, and that was a case of heart-disease. In correspondence with the low death-rate from ether, its employment had largely increased of late years, from 6200 in 1892 to 11,600 in 1893. Pichet's purified ice chloroform had been used 3890 times, with 2 deaths, so it would appear that the dangers of chloroform inhalation did not lie in any accidental impurity; indeed, the facts seemed to point the other way, and that the danger was directly proportionate to the purity of the chloroform. This consideration had lately led to a different mode of administration. It had been given more slowly, and occasionally atropine and cocaine had been used with it. As regarded accidents, 255 severe cases of asphyxia had occurred, and tracheotomy had to be performed three times. König's cardiac massage, so called, was frequently used, but not always with success. Ether had, therefore, shown itself the least dangerous anæsthetic, ten times less dangerous than chloroform, but it was not without its shady side: it was dangerous in lung-affections. It was agreed to still continue the investigation.

#### A PRESCRIPTION FOR ASTHMA.

The following prescription is given by the *Journal de Médecine de Paris* for May 6, 1894:

R Chloral,  
Iodide of potassium, of each, gr. xxx;  
Water, ℥iv;  
Syrup of bitter orange, ℥vi.  
1 to 2 teaspoonfuls three times a day.

#### THE USES AND MISUSES OF ANÆSTHETICS.

SILK writes a paper on this topic in the *Lancet* for April 28, 1894. In regard to the choice of an anæsthetic, he thinks nitrous oxide, ether, and chloroform are three anæsthetics not only of very different anæsthetizing power, but the ad-

ministration of which involves very different degrees of danger. Opinions may vary widely as to the anæsthetic to be employed in any one particular instance, but we ought to regard it as a distinct misuse of anæsthetics to employ a stronger or more dangerous drug when one involving less risk would serve the purpose equally well. Here, too, while giving due weight to the nature of the operation, greater prominence should be given to the "personal equation" of the patient than is usually done. If this be done it will be found that under some circumstances a precisely similar operation may call for a different anæsthetic in different individuals. The condition of narcosis is an unnatural one, and under no circumstances can it be induced with absolute safety; although under some circumstances the risk may be so slight as not to amount to very much, still we shall do harm rather than good by attempting to ignore the dangers altogether. With nitrous oxide, for instance, the risk is reduced to a minimum; but, as one or two recent cases have shown us, an element of danger still exists. With regard to the relative safety of ether and chloroform, even the most recent utterances of the Hyderabad Chloroform Commission have failed to convince the writer that "chloroform anæsthesia is free from risk." In this connection it is interesting to note that in the years 1888 and 1889 the total death-rate from anæsthetics in England (as recorded by the registrar-general) was thirty-three and thirty-six respectively; the chloroform death-rate remaining at the same figure for each year,—i.e., thirty-two. In the two following years—i.e., in 1890 and 1891—the death-rate went up to forty-two and sixty-nine, and the chloroform rate to thirty-six and sixty-two respectively. With regard to ether, on the other hand, it is far from judicious to administer it in every case to the total exclusion of chloroform; on the contrary, its routine use is open to many objections. But even admitting many exceptions to its use, there is no doubt that from the point of view of safety, it should stand second only to nitrous oxide on our list of available anæsthetics, and that not until we have quite satisfied ourselves that it is not appropriate should we proceed to the administration of the more potent chloroform. But it has been urged, is it not better that a man should administer an anæsthetic with which he is familiar, rather than attempt to give one requiring more skill than he can pretend to, and for the proper administration of which constant practice is necessary? When the services of others possessing the necessary skill and practice are not avail-

able, this may possibly be accepted as an excuse for the individual; but it is no excuse whatever for the principle and is merely an argument, and a very powerful argument, in favor of the better recognition of systematic teaching of anæsthetics as a necessary part of the medical curriculum.

The next point to which attention is called in the misuse of anæsthetics is connected with what may be termed their mal-administration. If we could bring ourselves to admit that the induction of anæsthesia is a comparatively trivial matter, there would be no objection to relegating the duties to unskilled and youthful assistants; or, for that matter, to the nurse or even the coachman. But all the facts point against this way of looking at it, and, on the contrary, concur in inducing us to think that in any surgical operation the position of the anæsthetist is second only in point of importance to that of the operator; in fact, for the time the responsibilities involved are sometimes even greater.

In working out the statistics some years ago, the author was much struck by the fact that in the majority of instances the fatal cases recorded had occurred at the hands of men whose average standing in the profession was but little over two years. In dealing with young administrators personally, the difficulty with which one has most usually to contend is that of inducing them to concentrate their attention upon what appears to them to be the petty details of the administration; their zeal for the loftier flights of surgery rather carries them away from the matter in hand. It is usual to endeavor to correct this error by repeated insistence upon the excellent maxim that "the administration of the anæsthetic should occupy the sole and undivided attention of one man." As a corollary the administration should be in the hands of the most experienced of those who have undertaken to assist the operator; and, if it were permissible, the words might be added, "that it would often be found of advantage that a stranger should be employed for this purpose." The reason for this suggestion is that one so frequently hears of patients having taken from twenty minutes to three-quarters of an hour to get under, or of not having been properly anæsthetized during the whole course of a prolonged operation, and not infrequently this "dilatatory induction" and "under anæsthetization" are due to over-anxiety on the part of the administrator, the outcome of too intimate an acquaintance with the patient and the disease from which he is suffering. After overdosage,

which is, of course, a palpable misuse of the anæsthetic, these errors of "dilatatory induction" and "under-anæsthetization" are so serious as almost to fall into the category of misuses.

In relation to the next point, the writer refers to Mr. Christopher Heath's presidential address to the Clinical Society of London, delivered on January 25, 1889. Mr. Heath referred to what he called "the exaggerated slowness of modern surgery," and he quoted Mr. Banks, of Liverpool, and Dr. Cheever, of Boston, in confirmation of his opinion that this "slowness" is highly detrimental to the patient. As Mr. Heath expressed his opinion that this is partly in consequence of the prolonged inhalation of the anæsthetic, no more need be said of it than that the writer agrees with this entirely. It has sometimes appeared to me that the operator has had such flattering confidence in his anæsthetist as almost to forget his very existence, and surgical ardor is apt at these times to overpower all other considerations. As a result of this, undue "shock" occasionally follows the operation, even supposing that no immediate ill-effects are noticed. The use of the word "shock" leads the writer to express views not in keeping with the views of the Hyderabad Commission, which claims to have proved that "chloroform and shock are incompatibles." It is doubtful whether we can ever secure actual immunity from shock, and, even if the lighter forms are absolutely abolished, the graver ones are certainly only diminished under any anæsthetic and however far it may be pushed. If, for instance, in operations for the radical cure of hernia, or in simple oöphorectomies, careful attention be paid to the administration, it will usually be found that at the precise moment when the spermatic cord is being manipulated, or the ovary caught in the forceps, the breathing becomes shallower, the pulse flags, and possibly the pupil dilates. As far as the author's experience goes, these changes will take place with either ether or chloroform, the only differences being that under the latter the alterations are more marked and last longer. Nor are such changes prevented, though possibly they may be lessened, both in extent and duration, by the most profound degree of narcosis. In the course of the address already referred to, Mr. Heath insisted upon the importance of maintaining the strength of the patient by careful dieting and proper hygienic precautions taken before the operation as well as after, and it may have been from reading this address that the author got the idea of advising the use of

enemata of hot beef-tea about half an hour before the time fixed for the operation. This plan has been very satisfactory whenever he has had an opportunity of putting it into practice, and is particularly to be recommended when we have reason to expect that the operation will be a long and exhausting one. It is doubtful whether much real good results from the prior administration of brandy. The question of the preparation of the patient comes well within the scope of this article, because it sometimes seems that troubles and difficulties arise which are ascribed to the anæsthetic, whereas they should be more properly attributed to defects in the preparation of the patient for the ordeal which he is about to undergo. The error of underfeeding is too often committed. It is better the patient should go on the operating-table with the risk of getting sick from eating than that he should undergo an operation almost fainting from actual want of food. Then, again, a patient takes an anæsthetic a good deal better, in every sense, if he has been subjected to what one may term the "hospital régime" for a few days. This, of course, is not possible in very many instances, but the fact should be borne in mind and the suggestion acted upon whenever possible.

#### THE MANAGEMENT OF FEVERS.

In the *American Journal of the Medical Sciences* for June, 1894, BURNEY YEO, of London, writes on this subject, and in the course of his paper points out that it is well known that in the presence of putrefactive processes bacillary action is remarkably stimulated, and the intestinal lesions of typhoid fever offer a remarkable illustration of this fact. The glandular infiltration, inflammation, and ulceration observed in the walls of the ileum begin just where the intestinal contents begin to undergo putrefactive decomposition, and they become more and more intense as we descend to the ileo-cæcal valve. They are also observed in the solitary glands of the colon, but here the fluid contents of the bowels are not long retained in contact with the mucous membrane.

If we can restrain early in the disease these putrefactive changes in the intestine, we may confidently hope to restrain the morbid activity of the typhoid bacillus; and thus we see how the production of intestinal antisepsis becomes an urgent and early indication in the treatment of these cases. We are greatly indebted to Professor Bouchard for pointing out this indication so clearly and forcibly as he

has done. A calomel or other purge in the initial stage of the fever (if diarrhoea does not exist), and washing out the large intestine twice daily with naphtholated water, enter into Professor Bouchard's and the author's conception of intestinal antisepsis.

But this intestinal antisepsis cannot be carried out thoroughly without great consideration, care, and observation in the matter of feeding the patient. We must adopt a method of feeding which shall by no possibility leave a bulky residue of unabsorbed material to undergo putrefactive changes in the lower part of the small intestine, and by its presence there excite and maintain diarrhoea and provoke an extension of the ulcerative and inflammatory changes dependent on bacillary infection of the intestinal glands. For this purpose we must note carefully what digestive and absorptive activity exists in each individual case. In many this will be found to be extremely small! Let this be well noted, for the neglect to do so is responsible for much avoidable mischief. The fault usually lies in the too free administration of milk. Again and again the writer has seen milk break down utterly as a food for typhoid patients. In cases he has seen it vomited as a firm, cheesy mass soon after it has been taken into the stomach, and in many others he has observed the maintenance of diarrhoea to be dependent upon the irritation of masses of milk curd passing through the inflamed and catarrhal intestine. These are obvious instances of the failure of milk as a food. There are others, far more common, in which it will be found, if the alvine dejections be carefully examined and estimated, that nearly, if not quite all, the casein of the milk taken as food is passed undigested, not as coarse curds, but as a fine deposit from the so-called "pea-soup" stolls. Again and again he has proved this, and shown that the amount of milk absorbed is in many cases remarkably small; and to persist in giving food that is not absorbed is to persist in introducing decomposable material into the intestine when we wish to keep it free from putrefactive decomposition, and to maintain diarrhoea when we wish to keep the bowels at rest. It is the popular mania for feeding which induces us to give food when it simply passes as an irritating decomposing substance along the intestinal tube. Remember that it is useless and injurious in these cases to give food that is not absorbed. Estimate accurately the absorptive capacity of the patient. If he cannot absorb milk at all, give him some other food. If he cannot absorb four pints in the twenty-four hours, give him two; and if he

cannot absorb two pints, give him one; and if he cannot absorb more than one-half pint, give him one-half pint.

Give all food very dilute; milk should be diluted with twice its bulk of water. We wish for antiseptic and eliminative purposes to give as much pure water as the patient will drink; give it, then, as a diluent of his food. When milk, however small in quantity, absolutely disagrees, very dilute, freshly-made, clean soups, in the making of which some aromatic herbs have been used, is the best substitute. Dilute albumin water, made with the white of an egg, is also then serviceable. Give whatever intestinal antiseptic you may be using at the same time as the food, so as to keep it from putrefactive decomposition. The antiseptic principle, when applied to the feeding of typhoid patients, necessitates, then, the administration of food in a dilute form,—food that remains liquid in the body as well as outside it, and that is not prone to be suddenly rendered solid by chemical change, as undiluted milk is. The author urges the necessity of exchanging milk for other food when it is seen that much solid, though finely-reduced casein, is passing in the motions.

As to the use of alcoholic stimulants, the general tendency is to give them too early and in too large quantities. They are needed in moderation towards the end of the most severe and protracted cases, but the less severe cases do better without any. He has used in association with moderate quantities of alcohol, in protracted cases, with marked cardiac debility, infusion of coffee, with more marked and sustained stimulation of the heart, than when alcohol alone has been given.

It is not to be expected that success will uniformly attend the above method of treatment—*i.e.*, an antitoxic or antiseptic method—unless we are enabled to apply it early in the disease. Every day, every hour that is lost in allowing the products of the infective microbe to be diffused widely through the system will tend to lessen the efficacy and minimize the effects of our medicinal antagonists.

If time is lost at the onset, the virus becomes diffused, and an intense general infection may occur; and then, if the individual tissues are especially sensitive to the virus, no remedies may be able to prevent the occurrence of a fatal lesion, such as excessive hemorrhage from deep ulceration or perforation. One great advantage in establishing complete intestinal antiseptics, and in attempting for this purpose to give just as much food as will be absorbed and no more, is that we are enabled, in

the advanced period of the disease, to keep the intestinal canal at rest, a most important indication in connection with the intense ulcerative processes which are usually present there in severe forms of typhoid. The writer gives, for this purpose, small enemata of two or three ounces of starch mucilage, each containing about ten grains of tannin and five grains of Dover's powder. This not only allays intestinal irritability, but it is useful in quelling nervous excitement also.

The free use of depressing antipyretic agents merely as reducers of temperature is objected to, as they simply attack a symptom, and they should be reserved exclusively for those cases in which the symptom they attack is for the moment the all-important symptom of the disease,—*viz.*, for states of hyperpyrexia. For this purpose, occasionally, but very rarely, he uses a small dose of phenacetin (5 grains). Even in such small doses the resultant great cardiac depression is at times alarming.

With regard to the routine cold-bath treatment of typhoid, the author passes it without comment, further than stating he has seen calamitous results occasionally follow its indiscriminate application. Its essential value in certain cases of hyperpyrexia is not to be doubted. It, however, attacks a result of the disease only; it is not wholly free from risks of its own; it is difficult to apply continuously, and unless applied continuously, often fails to reduce temperature, except for a brief period. As a tiresome and inconvenient method of treatment, its great claim to adoption was the superior results it was stated to yield.

#### PENTAL.

MR. T. E. CONSTANT read a paper at the Odontological Society recently on "The Production of General Anæsthesia for Dental Operations by Means of Pental." He remarked that pental is a new drug only as regards its name and method of preparation; it is, in fact, the amylene of Snow. The manufacturer, C. A. F. Kahlbaum, of Berlin, claims for it a definite and unvarying chemical composition and freedom from all impurities. Pental, or isoamylene,  $(\text{CH}_3)_2\text{C}.\text{CH}.\text{CH}_3$ , is a colorless liquid of low specific gravity, having a constant boiling-point of  $38^\circ \text{C}$ . It is obtained from amylene hydrate by heating with acids. It is insoluble in water, but mixes with chloroform, ether, and alcohol. It is extremely volatile and inflammable. It has a peculiar and somewhat disagreeable odor, but is so little irritating that the pure vapor can be inhaled

without the slightest discomfort. In his early experiments, Mr. Constant endeavored to induce anæsthesia by the open method,—that is, by pouring the drug upon a piece of lint lying in a cone-shaped holder; but this he found unsatisfactory owing to the waste of time and the quantity used. Subsequently he devised an apparatus somewhat on the principle of the Ormesby inhaler. In the majority of cases the following phenomena were noticed: Almost immediately the pental was inhaled there were slight flushing of the face and quickening of the pulse, the increased frequency being unaccompanied by any diminution of force. Respiration, if quiet at the commencement of the inhalation, became deep and rapid when the handle of the inhaler was turned full on, but became quieter when it was turned off. The eyes, if closed, opened as the patient became anæsthetized, and had a fixed and staring look. The conjunctiva reflex was rarely lost, although in some cases it was absent after four or five inspirations. In a few instances there was profuse perspiration after about thirty seconds. The duration of the anæsthesia produced was on the average of about one and a half minutes, but varied greatly with the patient and with the character of the respiration, never having been less than a minute or more than three; there was no muscular relaxation. Occasionally the patient's eyes would follow the movements of the operator; otherwise the patient remained quite still. In about five of the one hundred and forty cases the patients declared they were perfectly conscious throughout, but felt no pain and had no desire to move. There were no after-effects, immediate or remote, in any one case where it was administered in this way. However, he had had cases where dangerous symptoms arose, and recently three fatal cases had been reported.

In conclusion, Mr. Constant said that whatever may be the safety of pental as compared with chloroform, there can be no doubt that it is more dangerous than nitrous oxide, and that the last-named agent should invariably be chosen for brief operations. Nevertheless, he was of opinion that those of the medical profession who are in the habit of administering chloroform for operations where nitrous oxide or nitrous oxide and ether could be used equally well should give the preference to pental, because, even if it be no safer than chloroform (and personally the writer believes it to be far more so), the ease of its administration, the certainty of its action, the rapidity of recovery after its use, and the entire absence of after-effects entitle it to a claim upon the considera-

tion of those who deem chloroform a justifiable anæsthetic in dental surgery.—*Lancet*, April 28, 1894.

#### TOXIC SYMPTOMS PRODUCED BY ANTI-PYRIN.

HOOD reports in the *Australian Medical Gazette* for May 15, 1894, a case of this character.

Mrs. R. W. Y. had been under treatment for some months, suffering from a very persistent and generalized lichen ruber. Intense itching and irritation were marked features of the case. During the course of the disease she was attacked with influenza, headache and pain in the back being excessive. Antipyrin (5 grains) was ordered given every two hours till relieved. After the first dose the itching and irritation of the skin became much worse. According to directions, the patient took a second dose after the two hours were up; the effect of this was indeed dire. The itching and irritation became so extreme as to render the patient exceedingly ill. Every part of the body, even those which had been healed for some time before, became crimson, and the following morning the disease seemed to be as bad as it had been months previously. Before administering the antipyrin the case had been progressing satisfactorily, and at least two-thirds of the body had recovered from this comparatively rare affection,—lichen ruber. Only ten grains of antipyrin were taken altogether, yet with such serious effect. After its discontinuance the case went on quickly to the stage before antipyrin was used, though for some time the amount of scaly *débris* given off by the skin was much greater than before. The lichen ruber has now entirely disappeared and the patient is perfectly well.

#### THE TREATMENT OF INCONTINENCE OF URINE IN CHILDREN.

According to *La Tribune Médicale* for May 26, 1894, the following treatment is advisable. After urging the necessity of patience in the treatment of such cases, it is directed that the child shall take milk, alkaline waters, cold douches, if strong enough, and that any anæmic symptoms shall be overcome by proper treatment. Where the incontinence seems to depend upon atony of the sphincter, electricity may be used, the negative pole being placed in the urethra and the positive pole over the pubis. Very feeble currents may be passed for from one to five minutes once a week. Generally twelve to fifteen applications of this kind suf-



fice. It is also well to administer strychnine carefully in such cases, or the following may be used :

- R Extract of nux vomica, gr. iv;  
Reduced iron, gr. xv;  
Powdered geranium, gr. xv.

Make into twenty pills and take 1 to 3 a day.

Or we may prescribe,—

- R Ergotin, gr. viii;  
Powdered aloes, gr. ss.  
Take 1 pill once or twice a day.

In those cases where there is irritability of the bladder, the treatment with belladonna is applicable, and the following may be used :

- R Extract of belladonna, gr. iii;  
Camphor, gr. xv;  
Castor, gr. xv.

Make into twenty pills and take 1 at night.

Or this prescription may be used in the form of a suppository. In still other instances, bromide of potassium, in the dose of 30 grains at night, may be employed; 10 to 15 grains of antipyrin used.

#### TREATMENT OF PILES BY KOSO-BUDKI'S MODIFICATION BY CHRYSAROBIN.

McLEOD reports a case of hemorrhoids treated in this manner to the *Australian Medical Gazette* of May 15, 1894.

W. M., aged 40, suffered from internal hemorrhoids for twelve years. They used to prolapse every few weeks, and especially if he indulged unduly in alcohol. He says he got relief only when they "burst," causing loss of a considerable quantity of blood. Then they did not trouble him till the next prolapse.

In January, 1893, he began using suppositories made in accordance with the following formula :

- R Chrysarobin, gr. i;  
Iodoform, gr.  $\frac{1}{4}$ ;  
Ext. belladonna, gr.  $\frac{1}{8}$ ;  
Coca butter, gr. xxx;  
Glycerin, q. s. ft. suppositor.;  
Cocaine hydrochlor., gr.  $\frac{1}{4}$ .

He used altogether three and a half dozen of these—one daily. The hemorrhoids gradually diminished in size from January till May, at which date they disappeared, and he has had no return since then. He can indulge in drink freely without inducing an attack.

An important adjunct to the treatment was the "squatting" position at stool, which he was induced to adopt. He has gained in weight, and feels better in every way.

#### SYPHILITIC EPISCLERAL GUMMA.

DEMICHERI (*Annales d'Oculistique*, June, 1894) describes two cases of episcleral gumma of the episcleral tissue. He thinks that the cure of this affection is generally effected in about two months, although the duration may be shortened by proper treatment, and under vigorous antisyphilitic remedies the disappearance of the infiltrated area is very remarkable. This treatment necessarily includes the rapid mercurialization of the patient.

#### THE NASO-PHARYNGEAL TREATMENT IN OCULAR AFFECTIONS.

GUIBERT (*Annales d'Oculistique*, June, 1894) calls attention to the relation between pathological conditions in the naso-pharynx and various ocular lesions, particularly ulcerations of the cornea and lachrymal disease, and concludes that the treatment of the naso-pharynx is of paramount importance. This should include :

1. Antisepsis of the nasal passages.

2. Operations on the nose and pharynx,—for example, the removal of polyps, vegetations, and hypertrophies. If these measures are carefully pursued, astonishingly rapid results will be obtained in the cure of these affections.\*

#### FORMULAS.

For mild conjunctivitis :

- R Boric acid, gr. x;  
Biborate of sodium, gr. iv;  
Distilled water, f $\frac{3}{4}$ i.

Sig.—Use freely three times a day.

For conjunctival hyperæmia :

- R Boric acid, gr. x;  
Hydrochlorate of cocaine, gr. ii;  
Rose-water, f $\frac{3}{4}$ ss;  
Distilled water, f $\frac{3}{4}$ ss.

Sig.—Use freely three times a day.

For subacute conjunctivitis :

- R Biborate of sodium, gr. viii;  
Camphor water,  
Distilled water, of each, f $\frac{3}{4}$ i.

Sig.—10 drops every four hours.

\* The importance of the relation of nasal disease to ulcerations of the cornea, particularly of the phlyctenular type, as well as to disease of the lachrymal passages, has frequently been referred to in the Progress columns of the THERAPEUTIC GAZETTE, as well as in the Leading Articles. There is scarcely any doubt that many, if not most, of the examples of phlyctenular keratitis practically depend upon naso-pharyngeal disease, and can only be radically and thoroughly cured when this relationship is taken into consideration with the local therapeutic measures.—ED.

The following formulas are recommended by Mittendorf:

For simple blepharitis:

R Red oxide of mercury, gr. x;  
Vaseline, f3ss.

Sig.—Apply to the edge of the lid at bedtime.

Or,

R Ammoniated mercury, gr. xx;  
Powdered camphor, gr. x;  
Vaseline, f3ss.

Sig.—Apply at night.

Or,

R Solution of subacetate of lead, gtt. x;  
Ointment of rose-water, giii.

Sig.—To be used for the more chronic forms of marginal blepharitis.

#### PARTIAL SUPPRESSION OF THE EMPLOYMENT OF COLLYRIA.

In another portion of the THERAPEUTIC GAZETTE we have referred to De Wecker's protest against the uselessness of collyria in the treatment of corneal ulceration under many circumstances. In the *Annales d'Oculistique*, June, 1894, appears another article upon this subject, in which the following points are again enumerated:

1. Disinfection of the lids and especially of the palpebral border and the roots of the cilia.
2. Curetting of the ulcers, with irrigation of the infected area.
3. Injections beneath the conjunctiva and in the neighborhood of the infiltrated area with some drops of a solution of sublimate (1 to 1000).
4. The vigorous application of an occlusive bandage without the use of collyria. This bandage should be applied with antiseptic precautions.

#### SUBCONJUNCTIVAL INJECTIONS OF SUBLIMATE IN OCULAR THERAPEUTICS.

To the numerous reports which have already appeared upon this subject, and many of which have appeared in the THERAPEUTIC GAZETTE, may be added an abstract of a thesis by RIBEIRO DA SILVA (*Annales d'Oculistique*, June, 1894), who, after enumerating the various methods of administering mercury,—namely, frictions, ingestion by the mouth, hypodermic injections, and fumigations,—traces the history of the employment of subconjunctival injections and describes the advantages and disadvantages of the treatment. According to him, the employment of sublimate thus introduced into the eye is of use, and he supports his opinion by a number of observations, which are thus classified:

1. Affections of the cornea, interstitial keratitis, and ulceration with infiltration.
2. Ocular affections consecutive to the operation of cataract.
3. Episcleritis with corneal complications.
4. Iritis.
5. Syphilitic irido-choroiditis.
6. Choroiditis with opacities in the vitreous humor.
7. Choroido-retinitis.
8. Hyalitis.
9. Absolute glaucoma. In one case a patient had had sclerotomy performed on the right eye, and violent pain in the eye was relieved by a single injection of sublimate. In a second case precisely similar pains disappeared completely after three subconjunctival injections.
10. Neuro-retinitis. In all of these affections the author, by employing the sublimate injections after the manner described by Darier and already reported in these columns, obtained excellent results.

#### EVISCERATION BULBI.

ELISABETH WOLKOMITSCH (*Annales Suisses des Sciences Médicales*, 1 Série, Liv. 8), after giving a complete exposition of the facts known in regard to evisceration, proceeds as follows:

1. Exenteration of the bulbus is generally more easily and rapidly accomplished than enucleation, in which the separate tendons must first be found and cut. [This is an astonishing assertion.—ED.]
2. Exenteration avoids the danger of meningitis, as so far no case of this complication has occurred after operation.
3. The stump left after exenteration is larger and moves more readily than that after enucleation. It is also painless and very favorable for prosthesis. [The investigations of Hotz, of Chicago, which will be found in the Detroit letter of the THERAPEUTIC GAZETTE, July, 1892, demonstrate the inaccuracy of this statement.—ED.]

Dr. Wolkomitsch thinks that the objections to this operation—namely, the greater reaction and the longer period of time which elapses before recovery takes place—are neutralized by the improvement which is obtained; for example, the appearance of the closed eye, even after removal of the artificial eye, is said to be much less disfiguring than after enucleation.

She thinks all ophthalmologists are in accord, that in cases of panophthalmitis exenteration is the only method to be adopted. According to Bunge and Braunschweig, enucleation is in-

licated in intraocular tumors which have not perforated the sclerotic nor reached the extra-orbital space, and in disease of the bulbus which tends towards a centripetal development; for example, sympathetic ophthalmitis. Enucleation may also be substituted for exenteration when it is necessary to accomplish results in the shortest possible time without regard to cosmetic effect. Optico-ciliary neurotomy may be employed in cases of certain glaucomatous eyes which are painful, but which cannot propagate inflammation. According to Braunschweig, exenteration should be done in cases of staphylococcus degeneration, in panophthalmitis, in foreign bodies in the interior of the eye, iridocyclitis, glaucoma, and sympathetic ophthalmitis; and Bunge further thinks that the operation may be used in cases of phthisis bulbi, especially when they cannot endure the insertion of an artificial eye.

According to Guaiata, the absolute indications for enucleation are malignant tumors and sympathetic ophthalmitis, and for exenteration panophthalmitis and interocular suppuration in general. The relative indications for enucleation are painful phthisis,—especially when it is traumatic, associated with foreign bodies,—and for exenteration hydrophthalmos, staphylococcus, absolute glaucoma, and hemorrhagic glaucoma.

Schweigger performs enucleation in cases of malignant interocular tumors, when sympathetic irritation has begun, resection or enucleation, and in all other cases exenteration. According to this author, exenteration is preferable to enucleation for severe wounds, excessive ruptures of the cornea and sclerotic, which are followed not only by destruction of the sight, but generally also by purulent irido-cyclitis and lead to atrophy of the eyes after a tedious course; for smaller wounds, with or without the presence of a foreign body in the eye, if followed by purulent choroiditis, in order to induce as quickly and painlessly as possible the inevitable result of atrophy.

#### EXPERIMENTAL STUDY OF THE GALVANOLYTIC-KATAPHORIC INFLUENCES ON THE EYE.

SCHOELER and ALBRAND ("Experimentelle Studie über Galvanolytische-Kataphorische Einwirkungen auf das Auge," Wiesbaden, 1894) come to the following conclusions:

1. The metabolism in the interior of the eye is greatly influenced.

2. In galvano-puncture we possess a means of producing therapeutic effects with tolerable

certainty in the interior of the eye, and reactive changes to a degree corresponding with the power of the current applied. Although it has been possible by this means permanently to cure a marked case of detachment of the retina associated with a high degree of myopia, no definite opinion upon the value of such a process in the cure of retinal detachment can be given, on account of the lack of a sufficient number of experiments upon the human eye.

3. The kataphoresis of potassium iodide in and through the eyeball is accomplished with changes in the interior of the eye, which (a) are different from those observed in galvanopuncture, and (b) are to be distinguished from those developed by simple galvanic current, as well by the value of the caustic action as by their greater intensity.

4. The paper urges the possibility of further studies in this line, as opening an inviting field for research.

#### OPHTHALMIC HEMICRANIA.

AUGUST SIEGRIST (*Annales Suisses des Sciences Médicales*, 1 Série, Liv. 10), after writing fully concerning the cause and situation of ophthalmic migraine, comes to the following conclusions:

The symptoms of ophthalmic migraine can only be explained on the supposition that it is caused by a vaso-motor disturbance which has a duplex localization; the symptoms of the migraine pointing to a localization in the dura, and those of the "flimmer's scotom" to one in the occipital cortex. As the causes of these symptoms he particularly refers (and in this reference we find the indications for treatment) to errors of refraction, especially astigmatism, to excessive over-exertion of the eyes, and to a congenital, often inherited, state of the vaso-motor system. Important etiological factors must be looked for in hunger, fear, excitement, cardiac weakness, etc., and their presence give indications for treatment.

#### THE PATHOGENESIS AND PROPHYLAXIS OF INTRAOCULAR HEMORRHAGE AFTER THE EXTRACTION OF CATARACT.

TERSON (*Annales d'Oculistique*, May, 1894) believes that affections of the general and local blood-vessels and increased arterial tension are the causes which determine intraocular hemorrhage, and urges the careful examination of the hearts of patients on whom the operation of cataract is to be performed, as well as of the general vascular system. If arterio-

sclerosis is marked, he recommends a prolonged course of iodides, and for a few days preceding the operation a suitable diet, moderate purgation, tincture of veratrum viride, and chloral at night. Every cause of emotion should be avoided; and, finally, in order to end the operation as rapidly as possible, a preliminary iridectomy is advisable. He does not believe that injections of ergotin during the hemorrhage are of any value.

#### *XEROPHTHALMOS CURED BY SUTURE OF THE EYELIDS.*

M. RUDINE (*Annales d'Oculistique*, May, 1894) relates the case of a patient who was affected with xerosis of both corneas. The author sutured the edges of both eyelids, except a small portion in the middle, hoping to suppress in this way the evaporation of liquids. The result was excellent. The cornea, which may be perceived through the hole situated between the palpebral edges, is transparent and bright, and the patient can see to thread a needle.

#### *EPITHELIOMA OF THE CORNEO-SCLERAL JUNCTION CURED BY INJECTIONS OF SUBLIMATE.*

MARTIN (*Annales d'Oculistique*, May, 1894) had a patient with an epithelioma of the corneo-scleral junction, which reappeared after removal, and he concluded to try injections of sublimate. Two weeks after they were begun nothing but a superficial corneal ulceration remained, which at the end of a fortnight had healed. There was a slight relapse seven months later, which yielded to renewed injections.

PARISOTTI, discussing this case, doubted whether the result was permanent, as relapse had already taken place in one instance, and he thinks a grave responsibility is assumed by the surgeon who advises one suffering from such an affection to retain his eye.

#### *SUBCONJUNCTIVAL INJECTIONS IN CERTAIN OCULAR AFFECTIONS.*

Bocchi (*Annales d'Oculistique*, May, 1894) adds his testimony in regard to subconjunctival injections of corrosive sublimate, to which reference has so frequently been made in the pages of the GAZETTE. He finds them efficacious in serious corneal ulcers without hypopyon, but believes that they have little effect in parenchymatous keratitis, plastic iritis, and traumatic irido-cyclitis. On the other hand,

syphilitic retinitis yielded to their influence. In cases where prolonged cure is necessary he regards them with suspicion, because, according to him, sublimate injected under the conjunctiva turns to calomel, and can be found in the tissues.

#### *THE TREATMENT OF EPITHELIOMA WITH CHLORATE OF POTASSIUM.*

FUMAGALLI (*Annales d'Oculistique*, May, 1894) believes that chlorate of potassium, in the form of a salve or powder, has a cicatricial effect in cases of ulcerated epithelioma. When the chlorate of potassium does not suffice to cure the neoplasm entirely, its application has some use, because it restricts the ulceration and renders the removal of tissue by operation less extensive.

#### *THE ADVANTAGES AND DISADVANTAGES OF ELECTROLYSIS IN THE TREATMENT OF STRICTURE OF THE LACHRYMAL DUCT.*

LAGRANGE (*Annales d'Oculistique*, May, 1894) thinks that electrolysis deserves to rank with Bowman's method in the treatment of affections of the lachrymal ducts, but it must not be used to the exclusion of other methods. It is useful in order to make Bowman's method easier and more complete. Weak currents should be used for two or three minutes only, as currents exceeding six or eight milliamperes create sloughs which are followed by incurable strictures. Weak currents, on the other hand, soften the mucous membrane and make the introduction of a large calibre probe an easy matter. He believes that the electrolyzer exercises a strong antiseptic influence on affections of the nasal canal. He concludes that electrolysis is a very useful method in preparing the mucous membrane for dilatation with probes; second, that it is dangerous to undertake to cause dilatation by the action of the electric current alone; and, third, that a very valuable antiseptic action is added to its mechanical effect.

#### *TREATMENT OF BLEPHARITIS BY CORROSIVE SUBLIMATE.*

ESSAD (*Annales d'Oculistique*, May, 1894), after referring to the fact that ciliary blepharitis—the blepharitis glandulo-ciliaris of Desmarres—is an affection insensible to most medications,—for example, calomel, boracic acid, red and yellow oxide of mercury, cauterization with nitrate of silver, tincture of iodine, oil of cade, etc.,—reports that he has had excellent

success with the adoption of Despagnet's method with sublimate dissolved in glycerin as a vehicle.

#### PECULIAR ACTION OF SULPHATE OF DUBOISIA.

DR. H. F. HANSELL (*Philadelphia Polyclinic*, June 16, 1894) reports the case of an unmarried girl, aged nineteen, who received, for the purpose of correcting an error of refraction, a prescription of duboisia sulphate, two grains to the ounce. After using this for one day the lids of both eyes were nearly closed by an acute inflammation of the skin and infiltration of the underlying connective tissue. During the next twenty-four hours she instilled the drug three times. When again seen, both lids were almost entirely covered by the tense, red, and swollen lids; the conjunctivæ were not chemosed, the corneæ were clear. The same duboisia was used in another patient's eyes without producing similar effects. The inflammation subsided rapidly, and her family physician reported that she had recently been under treatment for pemphigus. Dr. Hansell attributes this unusual action either to idiosyncrasy or to an irritative local action upon an individual whose blood was disordered.

#### TREATMENT OF PHAGEDENIC SYPHILITIC ULCERS.

FOURNIER (*La Tribune Médicale*, June 7, 1894), in discussing the ordinary treatment for phagedenic syphilitic ulcers, advises, where other means fail, liberal applications of iodoform covered in with cotton and rubber tissue. This is often unsuccessful. In case this fails, caustics may be applied, but even these remedies are often followed by failure. Moreover, they are inapplicable when the ulcer is extremely large, or when it is placed upon the face. Under such circumstances it is well to absolutely stop all medication for a time; then, after the patient's health has been restored, to begin again with specific treatment. These cases may be cured or resist all other means of treatment.

#### PROPHYLAXIS OF POST-AMPUTATION NEURALGIA.

WITZEL (*Centralblatt f. Chir.*, No. 23, 1894), on the basis of two dissections, came to the conclusion that post-operative neuralgia was due to fixation of the nerve-endings through the bone or in firm scar tissue. This post-operative neuralgia, particularly in the case of amputation, he proposes to avoid in the follow-

ing way: After the limb is removed, even before bleeding vessels are secured, the nerve-ends are seized and drawn out as far as possible, the soft parts being stripped back with the back of a scalpel. They are then cut high up transversely. The cut end retracts deep in the soft parts, and is especially important in Pirogoff's operation to divide the bifurcation of the tibial nerve. In shoulder-joint excision the divided extremities of the nerves should always be carefully sought for, pulled out, and cut off. Primary healing is also to be sought for as a means of preventing post-operative neuralgia, since thus there is a scar tissue.

#### REMOVAL OF TYMPANIC VERTIGO BY REMOVAL OF THE INCUS.

BURNETT (*International Medical Magazine*, June, 1894) characterizes chronic tympanic vertigo as that due to adhesions and sclerosis in the drum-cavity, with consequent retraction of the membrana tympani and the chain of ossicles, and the consequent too firm pressure of the stapes into the oval window. The cure consists in liberating the stapes. This is best accomplished by removal of the incus. The reporter has operated on twenty cases for the relief of chronic tympanic vertigo. In the first seven the membrana tympani and the malleus were removed. All cases were relieved; but since there was more or less reaction, the operator determined to remove the incus alone. Thirteen cases of chronic tympanic vertigo were thus operated on, with most encouraging results. There was more or less relief in every case. Full notes of a few selected cases are appended.

#### THIAFORM.

SCHMID (*Therap. Monat.*, April, 1894, quoted by *Deut. Med. Zeit.*, June, 1894), after having tried thiaform in the treatment of burns and as an application to leg ulcers, holds that his results justify the statement that this drug is an admirable application, since it is non-toxic, easily managed, and produces no after-effects, and since it has a special quality of hastening cicatrization even when large surfaces are granulating.

Hoffmann, writing on the same topic, holds that this drug is equalled in healing power by no other therapeutic agent. Ulcers, burns, abscesses, even chancroids, yield rapidly under its use. It is absolutely non-toxic, even when used in large quantities. It is hæmostatic, locally anæsthetic, so much so that the use of

cocaine is often superfluous. It so much lessens wound secretion that drainage is unnecessary. In addition to these many advantages, the drug is odorless and exercises a powerful deodorizing effect on foul secretions.

#### LYSOL.

ANSCHUTZ and POHL (quoted by *Deut. Med. Zeit.*, June, 1894), in inaugural dissertations upon the antiseptic value of this drug, came practically to the same conclusions in regard to it. These are that it is chemically constant, that it makes a clear solution in water, that it kills micro-organisms in dilute solution, that it does not irritate the hands of the surgeon, that it is only very slightly toxic, and that it is cheap.

#### THE TREATMENT OF SALPINGO-OVARITIS.

ANVARD (*International Medical Magazine*, June, 1894) states that he has had very satisfactory results in the medical treatment of subacute salpingo-ovaritis by distention of the vagina by tamponing. The vulva and vagina are first washed out with antiseptic solution and a cusco speculum is introduced. Into this is poured a tablespoonful of glycerin with a little iodoform to prevent decomposition. Then with a pair of pincers a tampon as large as a walnut, made of cotton firmly pressed together, is introduced; this is passed into the posterior cul-de-sac of the vagina. The lateral cul-de-sacs are tamponed in the same manner, and, lastly, a tampon is placed in the anterior cul-de-sac; thus the os is surrounded with tampons, each saturated with the glycerin which has been poured into the speculum. These tampons should remain in position for two or three days, and then should be taken out by the physician in attendance. This treatment does not interfere with micturition or defecation, nor does it entirely prevent coition. It often accomplishes cures or considerable improvement in cases which seemed doomed to surgical interference. Not only are good effects observed when the adnexa are affected, but deviations of the uterus, notably retro-deviations, are most favorably influenced.

#### TREATMENT OF SPINA BIFIDA.

VAN HOOK (*North American Practitioner*, vol. vi., No. 5) holds that iodine injection is a relic of a past surgical age, and in the light of pathological studies is no longer to be prac-

tised. The advantages of this method are its ease of application and the fair percentage of cures. The objections are, however, insurmountable. Among these may be mentioned:

1. The method is a blind one, not permitting the operator to exercise any discretion as to the disposal of nerve-elements, but compelling him to bring about obliteration of the sac by the rude method of scar formation and contraction.

2. Many deaths take place immediately from the entrance of the irritant fluid into the spinal canal.

3. No adequate protection can be given to the contents of the spinal canal by the shrivelled sac and its contents. The mere obliteration of the sac is not the sole object of interference.

For the open method the following facts may be pleaded:

1. The operator may preserve and restore to the spinal canal the errant nerve-elements.

2. The meninges can at once be accurately closed under painstaking inspection by sutures, thereby protecting the spinal cord immediately.

3. The spinal canal can, if desired, be permanently closed by plastic methods, rendering recurrence impossible and giving protection to the spinal marrow.

Furthermore, the statistics of the two methods of operating are, so far, slightly more favorable to the open method. Hildebrand sums up the recoveries from injection at sixty-six per cent., while his statistics of the open method give 73.5 per cent. of recoveries. These statistics are, as Hildebrand admits, fallacious, inasmuch as they do not include all the cases of all the operators. A better comparison of the two methods will be found in comparison of the figures given by the operators who have had the greatest experience in the two procedures. Morton's own cases of injection give a percentage of recoveries of sixty-five per cent., while König and Bayer each had 76.9 per cent. of recoveries. This result, it is true, is not far from the general result obtained by adding all the statistics together.

As to the time of operating, Bayer's conclusions, as quoted by the operator, are as follows:

1. The operation for spina bifida sacralis and lumbo-sacralis is immediately and pressingly indicated in all those cases which are born with ruptured sacs, or whose sac ruptures intra-partum or bears a zona medullo-vasculosa, and which do not show paralyses, and are not complicated with severe malformations, except

club-feet. In these cases the nervous elements of the sac are to be carefully guarded.

2. It is also to be undertaken in cases which show paralysis as soon as the child is strongly developed and danger of infection threatens from the side of the exposed medullary constituents of the sac.

3. In cases which bear a sac closed and covered by normal skin the most delicate period of infancy is to be passed by as an operation period. Still, the operation, if the child is otherwise healthy, is not to be put off too long, for fear of traumatic injuries unavoidably acting upon the sac.

The modes of operating are:

1. Simple excision of the superfluous sac-wall, with suture of the remainder of the meninges and of the skin.

2. The method of Mayo Robson and of Bayer is the same as the first method, together with suture of the muscles or fasciæ over the defect.

3. Osteoplastic or chondroplastic methods. (Seneko, Botroff.)

4. A combination of excision with suture of the sac, plastic operation upon the muscles or fasciæ, and osteoplasty.

Finally, the author reports a case in point. Child, aged five months; tumor was in the lower lumbar region, forming a thin-walled cyst about three inches in diameter. The skin was opened by two curved incisions and dissected from the cyst-walls; the cyst was fully exposed and opened to one side and its contents inspected. Numerous large nerve-trunks ran freely through the sac, to be inserted at its apex; others followed the walls of the sac. The nerves were dissected free and pushed into the spinal opening. The meningeal sac was first cut through and sutured. Two flaps were raised from the lumbar fasciæ and brought together. In order to further close the spinal opening the rudimentary laminæ of the spinous processes were nicked and arched together; strong silk sutures were used to approximate the fascial flaps. The skin-flaps were carefully brought together with fine catgut. Recovery was uninterrupted.

#### A NEW METHOD OF VALVULAR GASTROSTOMY WITH A MUCOUS-MEMBRANE LINING.

ANDREWS (*Journal of the American Medical Association*, May 19, 1894) proposes a new method of valvular gastrostomy of the mucous membrane and lining; the operation is as follows:

The stomach is drawn through the external wound; incision is made very near the upper border directly downward about two inches; the lower part of the anterior wall is raised, turned out through the incision, and spread out flat. Over the lower end of the cut two incisions are made through the loose mucous membrane, one to the right and the other to the left, each extending about three-quarters of an inch laterally from the main incision. From the end of each of these two mucous-membrane incisions another cut is made downward through mucous membrane parallel to the axis of the body, about one and a half inches long. At the lower end the two incisions are turned at right angles towards each other, but not meeting, the separation of one-quarter of an inch being left between them. A velvet-eyed English catheter (No. 10 English scale) is laid along the middle of the quadrangle of mucous membrane mapped out by the last incision, and is allowed to project about one inch below. Two flaps of mucous membrane are then turned up from each side over the tube, free edges being secured to each other by Lembert stitches placed so as to turn the mucous surfaces in and bring the connective-tissue surfaces in contact. The extreme looseness of the submucous tissue allows the membrane to close over the tube without force. The raw surface left by raising the two quadrangular flaps of mucous membrane is covered in by drawing the edges on each side of the artificial channel over the latter and uniting them by suture. The stomach wound is then closed with a Czerny-Lembert suture; the edge of the orifice from which the tube projects is stitched to the skin. Finally, the wound in the abdominal wall is closed, excepting the point occupied by the tube. As yet, this operation has not been tried on the human.

#### TREATMENT OF FRACTURES OF THE JOINTS.

ROTTER (*Medicinisch-Chirurgisches Centralblatt*, No. 17, 1894) takes as typical joint-fracture those injuries, due to indirect force, so frequently observed about the knee and ankle, in which there is not only injury of the bone, but the ligaments are extensively torn and there is more or less displacement. The most important therapeutic means for combating these injuries are immobilization, massage, and the early institution of passive motion. The proper combination of these agencies occasions quick healing and the most complete functional restoration. Immobilization is the first treatment

to be instituted, not only because of the relief it gives to pain, but because by this means the lacerated parts are held in their proper position until a certain amount of repair has taken place and they have no spontaneous tendency to drop out of position. If there be displacement, this must be forcibly corrected at once. In case of fracture about the ankle-joint, the knee-joint should be bent to relax the calf muscles, and the foot should be held at right angles to the long axis of the leg. Before application of the dressing, thorough examination must be made to determine that the foot is neither displaced antero-posteriorly nor laterally. Immobilizing apparatus should be worn for eight days. Complete circular plaster bandage should never be used unless the patient is constantly under observation. Even when the patient is carefully watched, the trouble of removing this bandage is so great that it constitutes a serious disadvantage. The safer are the ordinary splints or fracture-box. These allow of the application of the ice-pack upon the seat of swelling. After eight days massage and passive motion are instituted. A plaster bandage is then applied for eight days, the foot and ankle being held in normal position. Sometimes anæsthesia is required when involuntary muscular contractures interfere with the proper position of the foot and ankle; the bandage is then removed and massage and passive motion is practised. Active movement should not be attempted before the fifth week.

#### TREATMENT OF TUBERCULOSIS OF THE TONSIL.

TUSSAUD (*Lyon Médical*, April 22, 1894), on the basis of three cases of tuberculosis of the tonsils, concludes that abuse of alcohol and tobacco are predisposing factors in the development of this affection. As treatment he prefers the galvano-cautery, carrying this not only through the diseased tissues, but into the surrounding comparatively healthy tissue, thus preventing absorption by forming a barrier of sclerotic tissue. In two of the reported cases the local lesions were cured, but, owing to persistence in bad habits, the patients ultimately perished of general tuberculosis.

#### TREATMENT OF AURAL VERTIGO.

MACKENZIE (*British Medical Journal*, No. 1740, 1894), after a discussion of the lesions, the diagnosis, and the causes of aural vertigo, holds that the prognosis is unfavorable so far

as recurrences are concerned, unless the condition is due to a foreign body.

The treatment of an acute attack requires that the patient should be put in a recumbent position so long as the vertigo is increased by standing up. The excitability of the nervous centres is subdued by bromide of potassium given in moderate doses. In gouty cases, bromide of lithium, also the salts of potassium, colchicum, and salicylate of sodium are often of service, especially when preceded by a mercurial purge. Counter-irritation, in the form of a small blister behind the ear, is sometimes of benefit. Any local disorders of the middle or external ear should receive attention. During the intervals between paroxysms, quinine, 3 or 4 grains three times a day, and in some cases double this dose, is of service. Salicylate of sodium appears to do good; pilocarpine is recommended given hypodermically, beginning with 3-minim doses of four-per-cent. solution every day, and increasing the dose to  $\frac{1}{16}$ ,  $\frac{1}{8}$ , or even  $\frac{1}{4}$  if the drug is well borne. The arterial tension should be well observed. For the purpose of keeping this down, mercury is particularly serviceable, an occasional blue pill being given once or twice a week, or, in place of this, calomel may be used, 3 to 5 grains, to be taken whenever there are premonitory symptoms, such as increased tinnitus, fulness in the head, or headache.

#### FRACTURED PENIS.

MENDE (quoted in *Monatsshefte f. Prakt. Derm.*, Bd. xviii., No. 9) reports a case of fractured penis. The patient, aged forty, ran with erect penis against the back of a chair. He experienced severe pain. Catheterization the following day drew blood only. The penis was greatly swollen, bluish-black towards the symphysis, and curved with the convexity below. Fluctuation was felt behind the glans where the bending was most marked. Repeated efforts at catheterization failed. The boutonnière operation was performed and a Nélaton catheter passed through the peritoneal opening. Some days later the penis was opened freely on the base, the torn urethra was sutured, and the patient recovered, with complete restoration of function.

#### CONGENITAL HYDROCELE OF THE NECK CURED BY DRAINAGE AND COMPRESSION.

DICKINSON (*British Medical Journal*, May 12, 1894) reports a case of congenital hydro-



cele of the neck cured by drainage and compression. The patient was three years old. At birth the hydrocele was noticed and gradually increased until it extended from the sternal line of the left clavicle in front to the middle line behind, and entirely filled the sulcus between the neck and the shoulder. By means of a trocar and canula eight ounces of greenish-brown albuminous fluid were withdrawn; a small incision then allowed of digital exploration; the cyst was drained by means of several strands of fishing-gut. The discharge became muco-purulent, owing, no doubt, to sepsis; the temperature ran up, the seton cut out, and the wound continued to discharge more or less freely till it healed, five weeks after the operation.

#### PREVENTION OF CATHETERIZATION CYSTITIS.

GROSGLICK (*Monat. f. Prak. Derm.*, Bd. xiii., No. 9) holds that since the urethra contains many micro-organisms which, in spite of all antiseptic precautions, may be pushed into the bladder by a clean catheter, and since disinfection of the urethra is neither possible by local washings nor by the administration of antiseptics by the mouth, and since urinary retention offers the most favorable culture-field, this dangerous complication is best avoided by the most scrupulous cleanliness, by soft rather than metallic instruments, since there is less insult to the mucous membrane by the slow progressive evacuation of the urine even in cases of retention of short standing, since a sudden evacuation occasions bladder hyperæmia, which is most favorable to the growth of micro-organisms. Catheterization should be repeated every six hours until the bladder can be evacuated spontaneously. If for any reason periodic catheterization is not possible, a permanent catheter should be employed.

#### PERFORATION OF A CHRONIC ULCER OF THE DUODENUM SUCCESSFULLY TREATED BY EXCISION.

DEAN (*British Medical Journal*, May 12, 1894) reports a case successfully treated by excision. The patient, a woman of twenty-seven, entered the hospital complaining of intense abdominal pain. She vomited frequently; she had a feeble pulse of 120; a rapid and small respiration; her belly was moderately tympanitic. Diagnosis of acute general peritonitis was made and operation performed. On opening the peritoneal cavity

purulent fluid escaped. In the region of the gall-bladder some flakes of lymph were found, in the centre of which gas bubbled, forming a froth. This gas was found to come from the duodenum, perforation being there situated three-quarters of an inch from the pylorus. Around the perforation a distinct induration could be felt. This indurated area was excised, and the elliptical opening thus made into the duodenum was sewed up by silk sutures, according to Lembert's method. The peritoneal cavity was washed out with warm weak boracic lotion, well sponged, and the wound closed. The patient recovered without incident, and was up and about three weeks after operation. Two weeks later she was attacked by acute intestinal obstruction due to a band. A second operation was performed, in which she perished. On post-mortem examination two perforations were found, each the seat of ulceration, above the seat of constriction for which the last operation was performed.

#### ABDOMINAL HYSTERECTOMY IN WHICH THE URETER WAS RESECTED AND IMPLANTED INTO THE BLADDER.

PENROSE (*Kansas City Medical Index*, No. 5, 1894) reports the following case of immediate implantation into the bladder of a ureter which had been divided during a coeliotomy.

A white woman, aged forty years, had a scirrhus cancer of the cervix uteri. Growth extended as high as the internal os, and infiltrated the left broad ligament, in a dense hard mass, to a distance of about one inch from the cervix. There was no involvement of the vagina. No symptoms of ureter obstruction.

Coeliotomy performed July, 1893. It was found that the left ureter passed directly through the hard mass in the left broad ligament, and in order to remove completely all diseased tissue, it was necessary to excise about one inch of the ureter,—the portion involved in the broad ligament.

After the uterus had been cut away at the vaginal junction, the distal end of the ureter was ligated with silk, the vagina closed, the peritoneum sutured over the seat of operation as much as possible, and the proximal portion of the ureter then implanted into the body of the bladder. The operation was similar to that used by Van Hook for uniting a ureter after complete transverse division, by lateral implantation of the proximal into the distal portion (*Journal American Medical Association*, March 4, 1893). An incision was made antero-posteriorly in the body of the bladder

somewhat less than half an inch in length. A needle armed with fine silk was passed through the bladder-wall from without in, at a point about a third of an inch from the edge of the incision on the right, and brought out through the incision. It was then carried through the right wall of the ureter close to the extremity, carried back through the incision in the bladder, and passed through the bladder-wall from within out, close to its point of entrance. A similar suture was passed on the left side of the incision in the bladder and through the left side of the wall of the divided ureter. Traction on these sutures dragged the ureter into the bladder, and when tied they held it in this position.

The loose peritoneum, which formed a partial investment to the ureter, was drawn down and sutured to the peritoneum of the bladder by a continuous silk suture around the line of union of the ureter with the bladder; the abdomen was closed without drain. A soft-rubber catheter was introduced through the urethra and retained for three days. The patient made an unusually easy recovery.

A recently-reported case of Dr. H. A. Kelly, where a divided ureter was immediately united by lateral implantation of the proximal into the distal portion, and the case just reported, go to show that the advice of our surgical textbooks should be modified, and that, if the patient is able to endure a slightly-prolonged operation, and the anatomical conditions are suitable, it is better immediately to implant the proximal portion of the ureter into the distal portion, or into the bladder.

#### HYSTEROPEXY IN CASES OF INTRAC- TABLE RETROFLEXION.

BRAITHWAITE (*British Medical Journal*, May 19, 1894) suggests the following modification of the mode of performing the operation of ventro-fixation of the uterus in cases of intrac-table retroflexion, which he supports with ten cases operated upon by the method given below.

The central incision in the abdominal wall is made, as usual, low down, and with its lower end not more than an inch, or even less, above the pubes; but he cuts only through the peritoneum itself in the upper half of the incision; in the lower half it is left intact, with as much fascia and cellular tissue as possible, the muscles, however, being drawn aside. Two fingers of the left hand are then passed in and the uterus pulled up to, and held firmly in contact with, the uncut peritoneum exposed in the

lower half of the wound. The fundus is then just visible above the edge of the peritoneum. The anterior surface of the uterus is now fastened to the peritoneum by silkworm-gut sutures, nearly as done by Drs. Napier and Schacht.

This plan of operating has several advantages. Two sutures can be placed from above downward at the extreme edges of the anterior surface of the uterus, in addition to the usual transverse ones. This insures a more complete and extensive coaptation of the peritoneum. It also does away with the objection raised by H. A. Kelly, that the adhesion produced elongates, so that soon the uterus is merely suspended by a band.

#### TUBERCULOSIS OF THE BLADDER.

At a meeting of the Brooklyn Surgical Society, November 16, 1893, DR. PILCHER (*Brooklyn Medical Journal*, vol. viii., No. 6) presented the following interesting case:

A man some twenty-five years of age applied to the Methodist Hospital for relief from chronic cystitis. He had some cough and emaciation, but the severity of his bladder-troubles exceeded all else. Symptoms had progressed for a year. For a period of ten days he was kept under observation at the hospital, during which time, from every half-hour to one hour, he would urinate with great pain, the urine containing characteristic deposits of cystitis. A cystoscopic examination was made, but owing to the rapid supervention of hemorrhage it was impossible to prolong examination to any great extent or derive any special information. Upon rectal examination, a thickened condition of the vesiculæ seminales was distinctly defined and a special nodular deposit in the right vesicle was evident to the touch. The usual treatment for cystitis was carried out during his stay, including systematic washings of the bladder by mild antiseptic agents, but without benefit. Examinations for tubercle-bacilli in the urinary deposits met with negative results. However, notwithstanding the failure to find bacilli, the pulmonary trouble lent force to the belief of tuberculosis of the bladder.

He was therefore subjected to suprapubic cystotomy, in which operation Dr. Bristow's method of dilating the bladder with air instead of water was employed. The appearance of the bladder shown would indicate that had water been used for dilatation it would have resulted in extravasation of its contents, on account of the existence of certain diverticula with very thin walls; also the bladder was like

a flaccid bag, having very little expulsive power and not contracting when it was opened.

Section disclosed a small abscess cavity in the supravescical space, just behind the symphysis. This was opened and evacuated; then, the incision being continued, the bladder was opened and its contents permitted to escape. The weak condition of the patient forbade further surgical interference. The granular condition of the mucosa was noted. The patient made a good recovery. The iodoform tampon applied at the time of operation was withdrawn on the third day, and from that time until the time of his death, some six weeks later, his bladder-symptoms were greatly relieved. Drainage through the suprapubic opening was sufficient to enable the bladder to be readily relieved. A portion of the time a double drainage-tube was kept in the opening, and at other times a simple iodoform gauze mesh was placed in the opening. The bladder was washed out daily; and at varying intervals, averaging twice a week, half an ounce of a ten-per-cent. iodoform emulsion was injected into the bladder and permitted to remain.

Post-mortem examination revealed diffuse tuberculosis of both lungs, with advanced destruction of portions of them, with diffuse tubercular deposits in the small intestines, and a granular condition of the mucous membrane of the bladder throughout its whole extent. This was less marked in the mucous surface of the trigone, the smooth reddish surface of which was suggestive of recently-healed ulceration. The ureters were free from disease, nor was the kidney involved. A curious feature was, that on either side of the bladder there was an attachment of a loop of small intestine, and by long traction the inflammatory adhesion has been elongated so as to form a band and a diverticulum from the bladder on each side.

Pilcher also cites the case of a young man, aged twenty-one, with tubercular antecedents, suffering from bladder-symptoms indicating the presence of profound disturbance, on whom suprapubic cystotomy was done by him, and a patch about the size of a half-dollar, at the lower lateral wall of the bladder, exposed, presenting a velvety surface deeply congested. Bacilli were absent from the discharges in this case as well. For several months drainage through the suprapubic opening was continued. Finally, the fistula was allowed to close, all his symptoms subsided, and up to this report (nearly two years) he remains well.

In still another case the author had recourse to the above means with similar satisfactory results.

In discussing the paper, Dr. Wood said that a young woman under his care, giving symptoms indicating bladder tuberculosis, was subjected to suprapubic cystotomy some three years ago; a small ulceration was found, scraped, and treated with iodoform. The symptoms subsided and the suprapubic wound was allowed to close. A few months afterwards she suffered from a return of symptoms. The bladder was reopened and the ulcerated spot again recognized in the same position, a little larger. It was treated as before, with the addition of lactic acid. A year later no recurrence was noted.

#### *EFFECTS OF ERYSIPELAS ON EPITHELIAL CANCER.*

COLLINS (*Kansas City Medical Index*, No. 5, 1894) reports the following case:

Eighteen months ago his attention was called by a patient to an ulcer nearly opposite the ear on his right cheek. This ulcer was one and a half inches in longest diameter, one inch in the shortest, forming an oval with irregular edges. The discharge was slightly purulent, tinged with blood. The granulations were soft and bled on the slightest touch.

The patient stated that twenty years ago there appeared at this point a small elevation, which frequently formed a scab, which every ten or twelve days would fall off and then reform, giving but little trouble and receiving but little treatment.

Nineteen years ago he was treated for a time with ointments and lotions, also some medicine was administered without special benefit. He was then assured that this was skin cancer and incurable. The ulcer gradually increased in size and depth. Some benefit was derived from a lotion of zinc sulphate and salt, dissolved in water to make a mild astringent solution. The ulceration, however, continued giving considerable pain, but much annoyance by its presence.

On November 12 he suffered from an attack of erysipelas of the face. This ran no unusual course, spreading rapidly from the tip of the nose, over the scalp, to the nape of the neck. The external dressing was of ichthyol and lanolin, which seemed to give relief and comfort.

As the erysipelas faded out and desquamations followed, the ulcer seemed to assume a more healthy appearance. Granulations of a normal character developed, and in about two weeks the ulcer was entirely healed. The cicatrix on March 1 is slightly indurated, but smooth and firm, presenting the appearance of normal cicatricial tissue.

## INGROWING TOE-NAIL.

TOUSEY (*New York Medical Journal*, May 19, 1894) has modified Cotting's operation by applying Thiersch's skin-grafting on the second day, shortening the time of healing by a week. Cotting's operation consists in excising the overlapping soft tissues; this can be performed under cocaine. The method of performing this operation is as follows: The point of the scalpel, with its edge held vertically forward, is placed at the side of the nail close to the matrix, and is pushed vertically through the toe close to the nail. The knife is then carried forward, converting the part of the toe external to the nail into a flap. The edge of the knife is then turned backward, and this flap is entirely severed by an oblique cut outward and backward. The nail is not cut at all and the matrix is not even exposed, but the side of the toe is hollowed out so that the side of the nail projects at all points beyond the flesh. The area thus denuded is about the size of a silver quarter of a dollar. The dressing consists of simple gauze for a week, then gauze moistened with balsam of Peru, the dressings being changed every three days. Complete cicatrization takes at least three weeks, and the surface requires a protective dressing for a week or two beyond that.

Tousey, to hasten cicatrization, applied iodoform gauze as the first dressing; two days later he removed this by soaking in sterilized salt solution, thus occasioning no bleeding. A graft sufficiently large to cover the entire raw surface was taken from either the leg or the arm. Over this graft rubber tissue and gauze moistened with sterilized salt solution (0.6 per cent.) was applied, and was changed every other day for a week, at the end of which time the surface was found healed.

## APPLICATION FOR BURNS.

The following is UNNA's prescription for burns (*Medical Press and Circular*, May 23, 1894):

R Lanolini, parts x;  
Adipis benzoati, parts xx;  
Aq. calcis, parts xxx.

## EPIDIDYMITIS.

ROLLET (*Medical Press and Circular*, May 23, 1894) holds that when epididymitis occurs as a complication of gonorrhoea, irrigation of the entire urethra should not be intermitted, since otherwise there is danger of the second

testicle becoming involved. The best treatment, in his opinion, is salicylate of sodium, a drachm and a half daily, or tincture of pulsatilla, 10 drops three times daily. The action of this agent is not as constant as that first named. Refrigeration is the best means of allaying pain; this is produced either by application of ice to the inflamed parts or by the spray of chloride of ethyl. The latter must be used with caution, on account of the sensitiveness of skin of scrotum. Reclus recommends the application of compresses of warm water. Rollet has been using for some time back, with considerable satisfaction, guaiacol, which he applies by means of a brush over the surface daily; not more than 1 gramme, or 20 drops, is used each time. The pain produced by the agent is slight and of short duration, while that appertaining to the malady disappears in about two hours, and the temperature falls.

## ARTIFICIAL HYPERÆMIA IN THE TREATMENT OF DELAYED UNION.

BUECHNER (*Journal of the American Medical Association*, May 26, 1894) calls attention to artificial hyperæmia in the treatment of delayed union,—a comparatively unknown, but very efficient, method.

Helferich proves, by citing cases where an increased blood-supply, caused by some pathologic condition, produces a thickening of bone in adults and a lengthening, or thickening, or both, in children, that hyperæmia plays a prominent part in the formation of new bone. It will not, however, cause the production of callus, but will only increase it when started by some other natural or artificial means.

To illustrate this method, Helferich takes a fracture of the humerus for an example. He first applies a flannel bandage from the fingers to a point about an inch and a half below the fracture; at the same distance (an inch and a half) above the fracture he applies a piece of rubber bandage or tubing tightly enough to retard the return of the venous blood, but not to interfere with the arterial circulation. This produces a marked congestion in the parts surrounding the fracture which are left uncovered by the bandages. At first the constriction is only allowed to remain a short time, but the duration of its application is rapidly increased until it is soon left on day and night. The writer has found its almost continuous application for a period of ten days sufficient in the cases in which it has effected a cure.

During the use of this method the fracture

should be properly immobilized. In the case of the upper extremity this is easily accomplished by the use of splints. In fractures of the leg a plaster-of-Paris dressing is employed, and the constrictor applied at its upper margin. To admit of the swelling and congestion at the desired point, the plaster dressing is applied quite snugly, the part where the congestion is desired being either heavily padded with cotton or large fenestræ being cut in the dressing. In fractures of the femur the Buck extension is used, the flannel bandage and constrictor being applied as in the case of the humerus.

This method should not be used where there is any tendency to a varicose condition of the veins. Helferich says it will not produce this condition in normal vessels. The same writer reports eight cases "in which, at the time a fracture is usually healed, there was very little or no callus." Six were fractures of the leg and two of the thigh. By the use of this method alone he accomplished a cure in each case in a few weeks. He also reports four cases—three of the leg and one of the forearm—in which it was employed subsequent to the nailing together of the fragments. All resulted in cures.

These cases indicate that in constriction and the resulting hyperæmia we have a valuable adjunct to the better-known methods of treatment in delayed union and pseudarthrosis.

#### BASSINI'S OPERATION.

FOWLER (*Brooklyn Medical Journal*, No. 6, vol. viii.) states that the object of Bassini's operation is to restore the normal location and tension of the displaced and relaxed structures. He accomplishes this in the following manner: The sac, together with the fascia lata and pectineal fascia, is exposed by an incision, which is placed parallel with and just below Poupart's ligament. The sac and its neck are isolated by blunt dissection to a point beyond the crest of the pubes. The sac is opened and its contents caught by a clamp to prevent untwisting, a ligature passed through the twisted portion and the neck securely ligated. The portion of the sac beyond the ligature is now cut away and the stump replaced, so as to expose the parts forming the canal and the oval ring. The latter is now closed as follows: The first suture is applied close to the spine of the pubes and passes through Poupart's ligament, after which the latter is somewhat elevated, and the suture is made to include the pectineal fascia at the level of the pelvic crest. The following sutures

are placed in a similar manner, approaching the crural vein; the fourth includes the falciform fold of the fascia lata and the pectineal fascia. None of the sutures are tied until all are placed in position. In securing the sutures, Bassini ties first those placed above. A C-shaped suture line arises in consequence of the tightening of the first three sutures, which is considerably depressed at its middle. The skin is now sutured separately. The operation occupies from fifteen to thirty minutes. Patients are allowed up after ten days; no truss worn.

Bassini's experience with this method includes fifty-four operations in fifty-one individuals (forty women and eleven men); the youngest of these was seventeen and the oldest seventy. Recovery took place in all cases without complication. Eight left the hospital after nine days, twelve after ten days, five after eleven days, and four after twelve days. The remaining twenty-one left the hospital after from thirteen to twenty days. None of the patients have since worn a truss and all are able to work. The time of observation extends over periods varying from three to nine years in twenty-seven cases; between two and three years in fourteen cases; the remainder for less than two years. In at least forty-one cases the cure remained permanent for periods extending from two to nine years.

#### STERILIZED CATGUT IN A CONVENIENT AND PORTABLE FORM.\*

KILIANI (*Medical Record*, May 19, 1894) advises that catgut should be sterilized as follows:

Dry catgut, not kept in oil, is put in absolute alcohol for twenty-four hours to remove all moisture, is cut off in pieces of two and three yards' length, one of which is rolled on a glass rod and then put in a glass tube open at one end and with a little hole in the other, through which a short end of catgut is pulled. The glass rod is removed and the roll of catgut is in the glass tube. This tube, with its contents, is put in a second glass tube a little wider and longer, with one end open. Then the tube is put in a dry hot-air sterilizing apparatus, the temperature of which is brought within one hour up to 176° F. This is to cause evaporation of the alcohol and water. The open end is then closed by melting the glass, and the hermetically-sealed tube is put again into the sterilizing oven, the temperature of which is brought within one hour up to the course of two hours more to 140° C. (284° F.), which is kept up for a whole hour. Another hour is consumed in letting the temperature gradually sink

again; then the outer tube is scratched with a file and it is ready for use. Immediately before using it, the outer tube is broken and the inner tube, with its contents, put for two minutes into the solution in which the instruments are lying.

This is Reverdin's method, slightly modified as to the method in which the catgut is stored.

#### TREATMENT OF DIPHTHERIA.

OLSON (quoted by the *Universal Medical Journal*, June, 1894) orders the following dissolved in spray in diphtheria:

- R Oil of eucalyptus,  $\text{zii}$ ;  
Benzoate of sodium,  $\text{zi}$ ;  
Bicarbonate of sodium,  $\text{zii}$ ;  
Glycerin,  $\text{zii}$ ;  
Lime-water, enough for a quart.

Sig.—Spray on the membranes for from three to five minutes every half-hour.

#### SUCCESSFUL LIGATURE OF COMMON CAROTID AFTER SECONDARY HEMORRHAGE FROM THE INTERNAL MAXILLARY.

JONES (*British Medical Journal*, June 16, 1894), in a case under his charge, which had been operated on for an epithelioma so extensive as to require the removal of the left half of the axilla, reports successful ligature of common carotid after secondary hemorrhage from the internal maxillary. Secondary hemorrhage occurred some two weeks after operation. He ligated the common carotid artery, then injected twenty ounces of warm saline solution into the median cephalic vein. The patient recovered.

#### TREATMENT OF PHARYNGEAL DIPHTHERIA.

HAMILTON, in cases of pharyngeal diphtheria, advises the following:

- R Mercury biniodide, gr. ii;  
Oil of peppermint,  $\text{mii}$ ;  
Sugar,  $\text{zi}$ . M.

Sig.—Place from 5 to 10 grains in powder every hour or two on the tongue, not giving any water for a few minutes afterwards.

The author advises that if laryngeal or tracheo-laryngeal symptoms develop, a quart of unslaked lime should be placed in a vessel of appropriate size and half an ounce of turpentine poured on it, then enough boiling water to completely cover the lime; the vessel should

be placed under a cotton sheet, thrown also over the head of the nurse and affected child. A cloud of vapor will be emitted for ten minutes at each sitting, which can be repeated hourly, if required, for the paroxysms of difficult breathing.—*Universal Medical Journal*, June, 1894.

#### FRACTURE OF DISLOCATED HUMERUS.

MCBURNIE (*Annals of Surgery*, April, 1894) was called to see a patient who, nine days before his visit, had broken his humerus and dislocated the head of the bone. The upper fragment was exposed and drilled and a strong hook screwed in it, thus allowing direct traction and after some difficulty replacement of the bone. The patient recovered with a useful arm.

#### EXTIRPATION OF THE LEFT LOBE OF THE LIVER.

TRICOMI (*Rev. de Chir.*, 1894, quoted by *British Medical Journal*, June 16, 1894) was consulted by a young man suffering from tumor of the liver the size of a fist. Around the base of the latter an elastic ligature was secured. The hepatic layer of perineum was dissected up around this ligature and stitched to the parietal. After two weeks the ligature came away and the tumor still remained fixed. An attempt to remove it by wire ligature was no more successful, nor did the thermo-cautery prove any more satisfactory, since it did not arrest bleeding. Some days later the growth was cut away and bleeding was stopped by the thermo-cautery and iron solution. In about two months the wound was quite healed. In this relation Ceccherelli and Bianchi's method of arresting hemorrhage from the liver is of interest. This consists of the application of a quilled suture. The portion of the liver which it is proposed to excise is circumscribed by two strips of whalebone, each perforated from end to end by several holes. A long needle armed with a double thread is passed through the hole at one end of one strip of whalebone, then through the liver-structure, and finally through the hole at the corresponding end of the second strip. Other ligatures are passed through all the other holes in both strips and through the intervening portions of liver. One of the ends of the first ligature is tied to the cut end on the opposite side, and then all the ends are closely tied together along the whole length of one strip of whalebone and afterwards along the second strip. In this way the interposed liver-tissue is closely constricted and gradually crushed.

All the ligatures having been secured, the liver may be freely incised without dread of hemorrhage. In order to avoid leaving a large raw surface exposed, and to guard against secondary hemorrhage, it is recommended that the free ends of the ligatures attached to one strip of whalebone be passed across the divided pedicle and tied to those of the other strip. In this way the hepatic tissue may be compressed at the seat of section.

#### JANET'S METHOD OF TREATING GONORRHOEA.

ANDREY (*Monat. f. Prak. Derm.*, Bd. xviii., No. 11) writes enthusiastically of Janet's method of treating gonorrhoea. This consists in irrigation of the entire urethra with solutions of permanganate of potassium varying in strength. The meatus, glans, and foreskin are first carefully cleansed. All these surfaces are then powdered with a mixture of talc and boric acid. No internal treatment is used at all; even alcohol need not be absolutely forbidden. The patient is warned that the treatment is somewhat painful. Complications are conspicuous by their absence. The armamentarium consists of a vessel holding from three to four pints of liquid, to which is attached a rubber tube two and a half yards long. A couple of glass nozzles with round points are kept in antiseptic solution. These are conical, and so made that they can be passed into the urethra at least two-fifths of an inch. One of these is attached to the end of a rubber tube. The reservoir is so arranged that it can be hoisted to a height sufficient to overcome the resistance of the compressor urethræ muscle, —usually three feet; exceptionally six or seven feet are required. The patient first empties his bladder, then lies down on his back, and after cleansing of the external parts, introduces the glass canula, which is attached to the tube of the reservoir, and turns on the stream. After a few ounces have passed into the urethra and out again by the sides of the canula, the meatus is clasped closely around the latter, and, the reservoir is watched to see when the liquid begins to flow into the bladder. Sometimes this lasts a few seconds; occasionally, some time elapses before this resistance is overcome. The stream is interrupted at intervals by pressure on the rubber tube, thus repeatedly distending the anterior urethra. Sometimes the resistance of the sphincter is not overcome by the first treatment, practice being necessary on the part of the patient. He is instructed to make an effort at urination. This facilitates

deep irrigation. When the patient experiences a strong desire to urinate this indicates that the bladder is full. It is better to inject not more than a half-pint to one pint. The glass tube is withdrawn, and the patient is instructed to urinate, occasionally stopping the stream by putting the finger over the meatus, this action distending the urethra. The bladder is distended once again after this and is again emptied. The strength of the solution varies from 1 to 1000 to 1 to 6000 of permanganate of potassium. The stream should be repeated every twenty-four hours. In very recent cases twice daily; in old cases these daily treatments should suffice to bring about a cure. When the patient presents himself in the florid stage, eighteen to twenty days is usually necessary. These washings are only stopped when the gonococcus is no longer found in the discharge. As long as the latter is white and thick it probably contains these micro-organisms. Immediately after the injection there is swelling of the entire penis, including the foreskin, and an abundant reddish serous discharge. Urination is painful. This continues for four or five hours, and is a favorable sign.

Contraindications to this treatment are the presence of cystitis or follicular urethritis. Epididymitis is a distinct indication for its employment. The report states that eighty per cent. of his cases were well in ten days; fifteen per cent. required longer treatment; five per cent. left his hospital uncured. The results are placed on very recent and very old gonorrhoeas. Usually, after this there is still a discharge, which lasts for four or five weeks and then disappears spontaneously. Eight or ten days after treatment coitus is allowed, the patient being instructed to wear a condom to avoid reinfection.

#### SURGICAL INTERVENTION IN INJURIES OF THE SPINAL CORD.

BEREZKINE (*La Tribune Médicale*, June 7, 1894) communicates a case of successful intervention for the relief of symptoms dependent upon traumatism of the cord. A young man shot himself with a revolver in the præcordial region. There resulted complete paraplegia, retention of urine and feces, anæsthesia in the lower part of the belly and the legs, the wound of entrance was about the level of the sixth rib, about an inch within the left nipple-line. The eleventh dorsal vertebra was painful on pressure. A longitudinal incision was made along the spinal processes of the eleventh and twelfth dorsal vertebrae and of the first lumbar. Every-

thing was found normal, the wound was closed. Ten day's later, as there was no change in the patient's condition, laminectomy of the three lower dorsal and first lumbar vetebræ was performed. When the dura mater was incised and the cord pushed to the right, a foreign body was felt in the body of the eleventh vertebra; this was extracted by means of a longitudinal incision of the cord and dura mater. Four days after operation micturition and defecation were normal. The patient regained the power of motion and anæsthesia was rapidly disappearing.

#### *PAINFUL CYSTITIS TREATED BY DRAINAGE OF THE BLADDER.*

LUMEAU (*Anal. de la Polioclinique*, No. 20, 1894) holds that suprapubic drainage is always to be preferred in the treatment of painful cystitis, since thus is allowed at the time of operation a thorough inspection of the interior of the bladder and the removal of tumor, stones, or other mechanical causes keeping up irritation. In tubercular cases especially this method should be employed, since the perineal route usually aggravates the trouble.

#### *LACTATE OF COCAINE IN CYSTITIS.*

WITZACK (cited by the *Journ. de Méd. de Paris*, No. 22, 14 anée) employs the following formula in the treatment of tubercular cystitis, holding that the lactate of cocaine greatly lessens or entirely relieves the pain incident to the employment of the lactic acid:

R Lactate of cocaine, 2 parts;  
Lactic acid and distilled water, 10 parts.

After having emptied and washed out the bladder, about 15 drops of the solution are applied to the ulcerated spot.

#### *WOOL FATS.*

IHLE, writing upon various wool fats,—namely, lanolin, adeps lanæ, œsypus,—holds that the latter is better borne in the great majority of cases than any other fatty preparation, not excepting resorcin, since it never dries and does not decompose. The paste he employs is made up of equal parts of œsypus, zinc oxide, and olive oil. When adeps lanæ is employed, the most suitable combination is as follows:

R Adeps lanæ, 15 parts;  
Zinc oxide, 10 parts;  
Olive oil, 5 parts.

Adeps lanæ is admirably adapted for the

making of mercurial ointment, according to the following formula:

R Hydrarg., 20 parts;  
Adeps lanæ, 50 parts;  
Benzoat., 10 parts;  
Ol. bergamot, 3 parts.

In the treatment of seborrhœa the author employs the following prescription:

R Resorcin, 5 parts;  
Ol. ricini, 15 parts;  
Balsam of Peru, 3 parts;  
Spiritus vini, 77 parts.

This is used in the morning, and in the evening there is rubbed into the head,—

R Adeps lanæ, 40 parts;  
Ol. amygdal.,  
Sulph. præcipitat., of each, 5 parts;  
Oil of rose, 1 drop.

—*Anal. de la Polioclinique*, No. 20, 1894.

#### *THE ANTISEPTIC VALUE OF ICHTHYOL.*

ABEL (quoted by *Deut. Med. Zeit.*, June, 1894), as a result of bacteriological research, found that preparations of ichthyol in weak solution quickly killed pyogenic streptococci, but the staphylococci and certain bacilli resist its toxic action. He advises that the drug should be kept pure or in fifty-per-cent. solution, since in weaker preparations the staphylococci of pus may remain alive for a long time, and thus such dilutions may actually infect a previous sterile wound. All weaker solutions should be sterilized by boiling before applying to raw surfaces.

#### *EIGHT HUNDRED AND FIFTY-TWO OPERATIONS FOR STONE IN THE BLADDER.*

Since 1877 (*British Medical Journal*, June 16, 1894), FREYER has operated on eight hundred and fifty-two cases of stone in the bladder,—two hundred and forty-five by perineal lithotomy, six by suprapubic lithotomy, three by rapid dilatation of the urethra in females, and five hundred and ninety-eight by litholapaxy. Every patient suffering from stone was operated on, no matter in what condition he presented himself; nor was any patient lost sight of until a cure had been effected. In the litholapaxy series a full fenestrated lithotrite was used to avoid the danger of *débris* becoming impacted. Bigelow's simplified aspirator is the one employed. The canulæ are only slightly curved, with the eye on the concave surface close to the end. They range from No. 6 to



18 English. Of the five hundred and ninety-eight cases of litholapaxy, there were four hundred and thirty-four adults and one hundred and sixty-four children. The adults varied in age from sixteen to ninety-six years, the average being forty-eight and a quarter years; the children from one and one-half to under sixteen years, the average being just seven years, three of them twice. Indeed, it may be stated that recurrence is as frequent after lithotomy as after litholapaxy. Great stress is laid on completing the operation in the first sitting. In five hundred and ninety operations in only eight was it necessary to have recourse to a second sitting, and in only two cases designedly. The time occupied by the operation varied from a couple of minutes to two hours. If possible, the stone should be entirely crushed upon the first introduction of the lithotrite. Patients were usually anæsthetized, but lately the operator has been in the habit of operating without anæsthesia when the urethra is capacious, or by producing local anæsthesia with cocaine. Where stricture complicated, this was at once treated either by rapid dilatation or by cutting. Moderate enlargement of the prostate was no serious impediment to the operation. Very great enlargement of course requires suprapubic operation. In these cases of hypertrophied prostate there is always much bleeding, and this renders complete evacuation more difficult, since the fragments of calculus are liable to become embedded in clots of blood, which have to be broken up by the aspirator and then removed with the entangled *débris* of stone. Where cysts complicated the disorder no special treatment was adopted. Kidney-disease, in all its stages, was frequently present, but, so far as the performance of litholapaxy goes, the author never desists, no matter what the state of the kidneys may be. Among the five hundred and ninety-eight litholapaxy operations there were thirteen females. One stone weighed over six and a quarter ounces; it was uric acid and unusually hard. Encysted calculi were also attacked by the lithotrite, since these stones usually lie in wide-mouthed pouches. When possible, the stone was generally withdrawn into the wider cavity of the bladder. If this was not possible, it was crushed *in situ*. The diagnosis, especially in cases of small stones, was established by means of an aspirator and canula. When the calculi are small, most careful sounding may fail to discover them. If, however, a full-sized canula is employed, the aspirator applied, and the process of pumping in and exhausting water, moving the eye of the canula about in

the bladder in various directions, and inserting it into pouches, should such exist, should a small stone be present, it will be carried with force against the eye of the canula by the outward stream, and a ringing click announces its existence. The reporter was in the habit of always performing lithotomy in children, having had a record of one hundred and ninety-seven cases, with only one death. Since 1885 he has performed litholapaxy one hundred and fifty-eight times, with two deaths. His first one hundred and nineteen cases were all successful; he then lost two cases consecutively. Among the five hundred and ninety-eight litholapaxy operations there were eleven deaths: nine among four hundred and twenty-six operations on adults, and two among one hundred and sixty-four on children; five cases perished of exhaustion, two of peritonitis, one of acute pyæmia, one of acute nephritis, and two of acute cystitis.

The eleven deaths in five hundred and ninety-eight litholapaxy operations—namely, four hundred and thirty-four adults, with nine deaths, and one hundred and sixty-four children, with two deaths—give a mortality of 1.84 per cent. on the whole, or about two per cent. in adults and 1.22 per cent. in children. There were two hundred and fifty-four lithotomies in his practice, with eleven deaths,—namely, fifty-four adults, with ten deaths, and two hundred children, with one death, giving a mortality of four and one-third per cent. on the whole, or eighteen and one-half per cent. in the adult, with one-half per cent. in children.

Freyer announces that he is an entire convert to the operation of litholapaxy in nearly all cases. Of his last three hundred cases of stone he was forced to resort to the cutting operation in six instances. He therefore strongly opposes Sir Henry Thompson's adage to the effect that suprapubic lithotomy is indicated in cases of large calculi.

#### CONSERVATIVE TREATMENT OF FEMALE PELVIC ORGANS.

GOODELL (*University Medical Magazine*, July, 1894), after considering the above subject at length, arrives at the conclusion that it is manifest that during the period of woman's menstrual life her mental, physical, and social welfare depend greatly upon the continuance of the catamenial and reproductive functions. Therefore, the conservation of those organs which preside over these functions is of the utmost importance, and should be so regarded by the physician.

The fatality of chronic diseases of the ap-

pendages is greatly overrated, and that factor need not greatly disturb us or hurry us on to hasty operative interference by abdominal section. Polk's method of curetting the womb and packing its cavity is commended.

Many women with adherent tubes and ovaries, and pus in these organs, suffer either no inconvenience whatever or very little indeed from that condition *per se*. There are, again, others who have pains and aches only at their monthly periods. Let, however, their health break down from grippe, from influenza, from malaria, from overwork, or from nerve-strain, then symptoms may arise from their hitherto latent pelvic lesions. In most of these cases no surgical operation whatever is needed; for, if the woman can be restored to her former condition of health, she will lose her local symptoms and become symptomatically well. Goodell reports curing cases with all the objective and subjective symptoms of ovarian or of tubal abscess by the use of rest, massage, and electricity, by a general building up of the whole system, and by topical treatment. In some few of these cases this treatment was followed by conception, pregnancy, and parturition.

Supposing simple therapeutic measures fail, or that the use of the curette and of uterine drainage are not followed by relief and the surgeon is driven to surgical interference, after breaking up the adhesions, he should never remove the healthy appendage unless the menopause has been already established, or unless there exists a good reason for hastening it on, such as the presence of a uterine fibroid or of uterine disease or the insanity of the patient. On the other hand, should both ovaries be intrinsically diseased, and their tubes contain much pus, both uterine appendages should be totally removed no matter what the age of the patient. Generally the pus is limited to the tubes, and in that case one ovary, barring its adhesions,—which, of course, must be broken,—is healthy enough to be left behind. In such case the tube alone, if possible, should be removed, and not the healthy ovary, or the healthy ovaries, if both happen to be sound. Nor is it needful to remove the womb on account of disease of its adnexa. Some of the author's most notable cures have been in cases in which the tubes were so rotten that they were either pinched off close to the womb, or else were removed by a wedge-shaped incision in the womb itself, the uterine wound either being closed by suture or seared by the actual cautery.

In such cases, unless contraindicated, Goodell endeavors to leave behind at least a small fragment. In several cases in which a piece of

an ovary not larger than a bean was left behind, not any menstrual or sexual changes whatever took place in the women. Should the uterine appendages be merely adherent and not intrinsically diseased to any extent during active menstrual life, they should be released, and, perhaps, the worse of the two extirpated, but not both.

From his own large experience, Goodell states that in the majority of women who have been castrated the sexual impulse soon abates in intensity, much sooner than after the natural menopause; and that in many cases after the lapse of a few years it wholly disappears.

#### NEPHRITIS IN ITS SURGICAL ASPECTS.

KEYES (*American Journal of the Medical Sciences*, June, 1894) reaches the following conclusions after a thorough discussion of the above subject:

1. Healthy urine is sterile.
2. Purulent urine is always microbic.
3. Microbic infection takes place from within the body by a number of methods in the course of disease; it is often brought about by instrumental manoeuvres on the part of the surgeon.
4. A healthy organism and vigorous bladder may cope successfully with microbic invasion and rid itself spontaneously, or with a little aid, of all damage arising therefrom, showing little or even no inflammatory response.
5. A suitable condition of the patient's soil is essential to the propagation and perpetuation of inflammatory phenomena upon the urinary tract, after microbic invasion.
6. This condition, intensified by traumatism and physical weakness, notably of the degenerative variety, is most intense when there is vesical distention with atony, and when the ureters are dilated and the kidneys involved in the changes incident to tension below,—namely, atrophy and sclerosis above, with or without surface catarrh.
7. Under these circumstances surgical pyelonephritis is most likely to declare itself as a result of microbic infection from below (occasionally from above), in the course of suppurative disease or after operative interference.
8. Asepsis, antisepsis, and sterilization of urine are ends to be aimed at in genito-urinary surgery; but, like all other greatest goods, not yet attained in perfection. Much, however, can be done by local means in a prophylactic and curative way; little by internal medication, and possibly as much more than by any other means by flushing the urinary passages with natural mineral waters.

*TAPPING OF LATERAL VENTRICLES.*

FRANK (quoted by the *Universal Medical Journal*, June, 1894), after a study of the subject of tapping of the lateral ventricles, comes to the following conclusions: 1, For distention of the ventricles from acute, simple, or tubercular meningitis, is clearly indicated, and, other things being equal, promises recovery; 2, for effusion of blood into the ventricles from trauma or disease, makes recovery a possibility; 3, for abscess involving the ventricles, is immediately and imperatively demanded; 4, for effusion into the ventricles from brain tumors, may afford relief to symptoms; 5, for chronic hydrocephalus, moderate distention of the ventricles, without enlargement of head, may afford relief; 6, for chronic hydrocephalus, great distention of ventricles, enlargement of head will lead to a fatal result.

*HOT BICHLORIDE POULTICE.*

ROGERS (*Northwestern Lancet*, June 15, 1894) warmly commends, in the treatment of variously assorted septic conditions, bichloride poultice after incision and for drainage. Where this is necessary, the affected part is splinted and is completely enveloped in hot bichloride gauze, or cloths wrung in a hot 1 to 3000 bichloride solution. Over this is placed a thick layer of absorbent cotton wrung out in the same solution. The whole is entirely covered by a pad of oiled silk, retained in position by a roller bandage. He holds that wherever the ancient flaxseed poultice is indicated, the bichloride can be substituted with eminently more satisfactory results.

*THE VALUE OF CAUSTICS IN THE TREATMENT OF MALIGNANT DISEASE.*

In the discussion of the above subject at the meeting of the American Medical Association, in the Section on Surgery, held in San Francisco, June 5, 1894, which was opened by Dr. H. O. Marcy, he stated his belief that malignant disease is, 1, local; 2, constitutional. Also, he receives far better results from local operations by the use of the knife, carefully eliminating the tissue wide of the area of disease, so far as we can ascertain its position. He believes caustics simply make an open wound subject to further infection.

DR. SHIELDS called attention to the fact that when we apply a caustic, no matter how slight or how strong it may be, with the hope of curing a malignant disease, we are applying it to a tissue which is undergoing rapid cellular

change, and are liable to make a non-malignant growth a very malignant one. He also points out that there is a condition in post-syphilitic gummatous growths which does not allow of immediate cure by the use of iodide of potassium, and that one should give a very careful consideration, especially to tumor of the tongue of syphilitic history before he proceeds to remove the tongue.

DR. GRISWOLD agreed with the foregoing conclusions and reported the case of a woman coming to him for operation five years ago. Her system was involved, but through the operation she has lived much longer than she possibly could have done without operation or recourse to milder measures. This reporter describes his method of applying caustics in epithelioma on the face, hand, or lip, where the patients refuse to submit to the knife. The caustic is made of sulphate of zinc, dried so that the water of crystallization is all driven off by heat, till it bubbles up after the water of crystallization is driven off, and then powdered in a mortar promptly and quickly, so that it shall not absorb water from the air; put it in a bottle and pour in enough chemically pure sulphuric acid, so that when it stirs up it will make a paste so thick that when you put a little stick or little glass rod in it, a good-sized drop will adhere to that stick or glass rod and not drop off. Have plenty of absorbent cotton or plaster, and apply that all over the surface. It is a little painful, but in about ten minutes it destroys the tissue to the depth of about one-eighth of an inch. Then take the point of your pen-knife and scrape it off until it begins to bleed, to the quick; then apply it again, and after four or five applications the physician must use his judgment as to whether he has got the cells out or not. Dr. Griswold has met with but one failure in twenty operations. It may take an hour and a half or two hours, according to the size of the epithelioma. Any simple ointment is afterwards applied.

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Reviews.

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ILLUSTRATED DICTIONARY OF MEDICINE, BIOLOGY, AND ALLIED SCIENCES. By George M. Gould, A.M., M.D. Philadelphia: P. Blakiston, Son & Co., 1894.

We are told in the title-page of this magnificent work of reference that it includes the pronunciation, accentuation, derivation, and definition of the terms used in medicine and the various sciences closely related to that art, and

on looking through the sixteen-hundred-odd pages of which the work is composed, we cannot help being impressed with the fact that the author has carried out to the letter the statements as to the scope of the work contained on his title-page and in his preface. The author very distinctly prefers the newer methods of spelling which he has introduced into the columns of the *Medical News*, of which he is editor, but has been sufficiently broad in his ideas to give the spelling of many words in both the new and old form, although throwing his influence in favor of the former. He advises the dropping of the diphthong, and distinctly favors phonetic spelling. So far as we can judge, the dictionary deserves to at once take a high rank among the medical lexicons of the world. It cannot, of necessity, be as full as is that of Foster, with its four enormous volumes, nor as ready for reference as the smaller dictionary which Dr. Gould has already prepared. As it stands, it is a work showing not only a wide knowledge of all those branches of learning required of the lexicographer, but as a marvellous piece of work to have been done by practically one individual. In such a book mistakes must necessarily occur. Thus we notice that the old-fashioned and practically useless antidotes for phosphorus are given under phosphorus, on page 1072,—namely, sulphate of copper and French oil of turpentine. The first of these has been proved to produce death more rapidly than the phosphorus, and the second to be absolutely unobtainable under ordinary circumstances, and useless when employed. Again, in the table on poisons, on page 1136, we notice that acetanilid and antipyrin are characterized as corrosive poisons, which they certainly are not under any circumstances. Much less can they be considered such if Dr. Gould's own definition is to be relied upon,—namely, "a substance that destroys organic tissue either by direct chemic means or by inflammation and suppuration." These drugs may destroy the blood and other tissues by direct chemic means, but certainly not by what we ordinarily mean by a corrosive action. We also notice that under the remedial measures to be employed in poisoning by chloroform, strychnine is not mentioned, and in poisoning by the various poisonous fungi nothing is said of the value of atropine, which is practically a specific in many such cases. Under snake-bite no mention is made of the value of permanganate of potassium and strychnine, which are certainly the two most powerful antidotes that we have to-day, as proved in the case of the first drug by the experiments of Weir Mitchell and

Reichert, and its practical application by many clinicians, while the employment of strychnine has been heralded the world over with an enormous number of successful cases by its originator, Dr. Müller, of Australia, and many of his followers.

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## Correspondence.

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### NOTE ON STRYCHNINE NITRATE IN DIPSOMANIA.

To the Editors of the THERAPEUTIC GAZETTE.

DEAR SIR:—It seems to me time that some one should file a demurrer to the emphasis which is given the acidulous radical in the literature upon the use of strychnine nitrate in dipsomania and allied states. Strychnine and nux vomica were used for the alcohol habit half a century ago, and its therapy in these cases is exactly based upon its physiological action. This dynamic action resides in the alkaloid and not in the acidulous radical of any of its salts. Any salt in appropriate dose will produce that therapeutic effect which is considered very valuable by all clinical observers with experience in treating drunkards and tobacco users.

In modern times a royal road to notoriety has been discovered, the toll on which is simply to present some rare base combined with an old and valuable acid, as a new bromide, and then publishing a paper on the "new" drug in the old diseases in which the old salts have been long used, or else some old base is combined with an acid which forms a salt not much used, and the "new" salt is highly lauded as a discovery in therapeutics. In the present case the profession seems to have even followed the lead of the leading charlatan of the century, and to consider nitrate of strychnine a new remedy without a substitute.

A somewhat large clinical experience carefully digested, has enabled me to say to those who learn only at the bedside, that sulphate of strychnine is equally as valuable as is the nitrate in the treatment of all habits. The proper and scientific method of expression is to use the term strychnine in discussions of this subject. As regards the facts, I regard strychnine as simply invaluable in all cases of alcohol, tobacco, or morphine habit, especially after the cure is nearly completed.

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## Original Communications.

### THE PHARMACOLOGY OF FOURTEEN MEXICAN PLANTS.

A PAPER PRESENTED TO THE SECTION ON THERAPEUTICS OF  
THE PAN-AMERICAN MEDICAL CONGRESS.

BY FERNANDO ALTAMIRANO, M.D., CITY OF  
MEXICO.

I WISH to present to the Pan-American Medical Congress the results obtained by several Mexican physicians in the study of some indigenous plants. I have compiled whatever work has been accomplished by the Instituto

Médico Nacional (National Medical Institute) regarding the botanical classification, chemical composition, and physiological action of said plants, and in many cases I will refer to their most common therapeutic applications. May this study prove of some interest to the distinguished members of the Congress.

*BOCONIA ARBOREA (Watson—Papaveraceæ).*

*Habitat.*—This plant is known in Michoacan under the common name of inguande, in Morelos under that of llora-sangre (weeping-blood), and in Córdoba it is called gordolobo. It grows abundantly in Michoacan, near Uruapan and

Tengambato. The part of the plant most generally used is the bark. This yields a yellowish juice which contains the active principles. According to M. Lozano (1893), the bark has the following

**Chemical Composition.**—Water, 10,000; salts, 9500; fats, 1320; acid resin, 9364; boconine (alkaloid), 5116; gum, 1875; dextrin, 5775; oxalic and tartaric acids, 2430; coloring matters, cellulose, etc., 44,990; losses, 9620. The alkaloid was termed *boconine* by Lazo de la Vega, who also made an analysis of the bark. The substance known as boconine is really a mixture of several alkaloids. Lozano has determined four of these, which he has named as follows: *Boconirubine*, *boconixanthine*, *boconichlorine*, and *boconiiodine*, names given on account of the coloration they produce with concentrated sulphuric acid (in the order in which the alkaloids are mentioned),—that is, red, yellow, green, and violet. Again, the salts of the first body are red, those of the second body yellow, and those of the third and fourth alkaloids white. All these salts are crystallizable.

**Physiological Action.**—Boconine, a mixture of three alkaloids, produces anæsthesia of the peripheral nerves at the point of injection. This is followed by an action on the nerve-centres, causing vascular dilatation and hemorrhages. While the drug exercises cerebral disturbances, it does not produce loss of consciousness. The powder of the drug, administered by the stomach, causes emetic effects, due, probably, to the presence of resinous principles.

**Therapeutic Uses.**—The powder has been applied, with good effect, to produce local anæsthesia in surgical operations.

*CACALIA CERVARIFOLIA (D. C.—Compositæ).*

**Habitat.**—State of Chihuahua. The plant is commonly called *matarique*, the word signifying "pain-killer." The root, the part of the plant in common use, has an aromatic odor and a bitter taste, and is covered with yellow resinous points.

**Chemical Composition.**—Cacalia contains the following: Resin, essence, glycogen, tannin, glucose, and an alkaloid.

**Physiological Action.**—In doses of .10 gramme, the alcoholic extract of the plant causes in frogs paralysis of the voluntary muscles, diminished sensibility, and cardiac arrest. On dogs, an intravenous injection of the same extract, of .50 gramme, produces general analgesia, depression of cardiac energy, and respiratory disturbances, all these phenomena disappearing in the

course of two hours. In man, 30 grammes of the tincture have caused vomiting, intestinal pain, diarrhoea, cramps, and lypothymic symptoms.

**Therapeutic Uses.**—Externally, the drug, in the form of frictions, is serviceable in the pains of neuralgia, excoriations, and burns; its antiseptic properties enhance the cicatrization of wounds. It has been employed against putrid dyspepsias, constipation, and meteorism. Its principal use, according to Dr. Ceballos, is as an analgesic to combat muscular, rheumatic, and articular pains.

**Administration.**—The tincture is given in doses of from 15 to 30 grammes, but its effects on the heart should be carefully watched. Externally, it is applied to wounds in the form of a watery solution of the strength of twenty per cent.

*CALEA ZACATECHICHI (Schl.—Compositæ).*

**Habitat.**—Córdoba and Orizaba, of the State of Vera Cruz. Its common name—*zacatechichi*—signifies "bitter herb." It is certainly very bitter, and is used by the laity in certain diseases of the stomach.

**Chemical Composition.**—According to Armendáriz, *calea* contains chlorophyll, coloring matter, essential oil, acid resin, a volatile acid, a bitter principle, tannin, and salts.

**Therapeutic Uses.**—In the hospitals the plant has been employed, with good results, in the treatment of dyspepsias, gastric catarrh, anorexia, atonic diarrhoea, etc. The remedy increases the appetite, facilitates digestion, and combats constipation.

**Administration.**—A decoction in the proportion of five per cent., the extract in 1-gramme doses every twenty-four hours, and the tincture in quantities of 4 grammes in the same time, are employed.

*CALLIANDRA GRANDIFLORA (Benth.—Leguminosæ).*

**Habitat.**—This plant, commonly known under the names of *pambotano*, *xoloxochitl*, and *cabellitos*, vegetates in the States of Vera Cruz, Morelos, and Michoacan, and in the Valley of Mexico. The parts of the plant used are the rootlets, which are rhizomes, of a fasciculated, tortuous, fibrous, and woody character, having a peculiar persistent acrid taste.

**Chemical Composition.**—*Pambotano* is made up of fatty matters, wax, essence, tannin, resin, red coloring matter, and a glucoside.

**Action and Uses.**—A decoction or the extract of the plant produces no marked effect on frogs or dogs, whether the substance is administered

by the stomach or subcutaneously, once or for several consecutive days. In man, it has been tried in numerous cases of malarial disease, but so far it has proved of no avail. The remedy has never caused the disappearance of the hæmatozoa of Laveran. The plant cannot, therefore, be considered as a reliable drug to use in the treatment of intermittent fevers, notwithstanding its great reputation as an antiperiodic among the laity. It might be of service in chronic paludal intoxication, to combat the diarrhoea and gastric disturbances, owing to its antiseptic properties. A decoction is the preparation most commonly employed. Sixty grammes of the plant are placed in five hundred grammes of water. This is boiled until it is reduced to two-thirds of the original amount. Long boiling is necessary to dissolve the extractive principles.

*CORIARIA ATROPURPUREA (D. C.—Coriaria).*

*Habitat.*—*Coriaria* is also known as tlalocopetate, and is abundantly found in Ameca-Ameca, of the State of Mexico. It is highly poisonous, and cases of poisoning occur every year among country children who eat the fruit.

*Chemical Composition.*—According to Francisco Rio de la Loza, *coriaria* is composed chiefly of water, fats, resin, tannin, gallic acid, yellow coloring matter, coriamartine (active principle), and salts. Coriamartine is a solid white substance, made up of hexagonal crystals. It is but little soluble in cold water; it is readily so in alcohol, ether, and chloroform. Sulphuric acid gives to it at first a yellow color, decomposing afterwards with the production of a white powder-like substance. Hydriodic acid gives with the drug a clear yellow hue. The volatile and fixed alkalies give to solutions of coriamartine a rose coloration, which soon turns yellow.

*HECTIA GLOMERATA (Zucc) AND H. HARGENTEA (Baker—Bromeliaceæ).*

*Habitat.*—The common name of this plant is guapilla. It is abundantly met with in the States of San Luis de Potosi, Querétaro, in Mixtecapan, and other points. It is especially found in rocky soils. The laity use the plant as food, for emollient applications, and as a remedy for pneumonia. At the base of the leaves, on both sides, is found a yellow substance, giving the appearance of a coat of varnish. By rubbing the leaves together this coat is loosened in adhesive, thin plates, consisting of a balsam or vegetable wax, having, according to Armendáriz, the following

*Chemical Composition.*—Essential oil, 2600;

benzoic acid, 5733; acid resin, 79,267; neutral resin, 2100; gum, 40; mineral salts soluble in water, 1360; mineral salts insoluble in water, and losses, 8800. This natural product, owing to its chemical composition, has been classified as a body analogous to benzoin, but presents different peculiarities. It may be known under the name of *bromelian benzoin*. Its properties are these: It has a greenish-yellow color, an aromatic odor, and somewhat sweetish taste; it is soft, and can easily be compressed between the fingers. It melts at 72° C., and has a specific gravity of 1.183 at 18° C. The substance is inflammable, and burns with a smoky reddish flame, producing an odor of benzoin. It is soluble in sulphuric ether, absolute alcohol, and in a mixture of alcohol and chloroform; it is almost insoluble in water, in petroleum ether, in benzine, sulphide of carbon, and alcohol at 50° C. The product exhibits a dark-green color with nitric acid; a green, turning into a violet-blue, with sulphuric acid. The alkalies dissolve it, producing a reddish liquid. By a process of sublimation, in the presence of alkalies and water, benzoic acid has been obtained, but this acid was not obtained by the dry method. The applications of bromelian benzoin depend upon the composition of the drug. It may be used as a substitute for the benzoin balsams, etc. The remedy under consideration may be obtained at a low cost, owing to the abundance of the plant from which it is extracted.

*ERYTHRINA CORALLOIDES (D. C.—Leguminosæ).*

*Habitat.*—This tree is vulgarly called tzompantle; the seeds are known under the name of "colorines" or "patoles." The plant grows in the Valley of Mexico and other places. It is cultivated in the gardens. The wood is used for the manufacture of corks; the flowers are employed as an article of food; the seeds are poisonous. According to the studies of Francisco Rio de la Loza, *erythrina* has the following

*Chemical Composition.*—Water, 7.15; fats, 13.35; resin soluble in ether, .32; resin soluble in alcohol, 18.47; alkaline substances, 1.61; albuminous matter, 15.87; mineral salts, 89.15; losses, .68. According to the investigations of the writer, presented to the Mexican National Academy of Medicine on July 27, 1887, the extract of *erythrina* has the following substances: Coralloidine (convulsant), coralline (inert or little active), erythroidine (powerful motor paralyzant), erythric acid (inactive), erythro-resin (emetic), an inert principle, fats,

glycogen, coloring matter, mineral salts, resin. Summarizing the physiological action of this extract, it may be said that it paralyzes the terminal plates of the motor nerves, produces convulsions, and acts as an emetic.

*Therapeutic Uses.*—The extract of erythrina has been recommended in the treatment of tetanus and epilepsy, in chorea and similar disorders. There appears to be no indication for its use as an excitant. The drug is a sure emetic for the lower animals, especially in the case of birds.

#### GAULTHERIA OVATA (*D. C.*—*Ericaceæ*).

*Habitat.*—This plant is popularly known under the name of axocopaque. It grows abundantly near Huauchinango, in Orizaba, and Jalapa. The whole plant is aromatic, and is quite frequently used as a perfume in churches and in private houses. The ancient Mexicans employed it to perfume their clothing and to preserve this from the action of moths. It was also used internally in the treatment of various diseases.

*Composition and Uses.*—The plant contains twenty per cent. of essential oil, which may be considered as the active principle, and is analogous to the essence of winter-green or *Gaultheria procumbens* of the United States of North America. Its antiseptic, diuretic, and antirheumatic properties have been made use of in practical medicine. It is especially employed in the treatment of rheumatic affections of children, as possessing advantages over the salicylate of sodium. As an antiseptic, the active principle of *Gaultheria ovata* is as efficacious as either salicylic or phenic acid, without being so toxic. It is to be preferred in the antiseptics of mucous membranes and external wounds. An infusion of the drug is the form of preparation most commonly used. This is prepared in the strength of ten per cent. It is easy to take in this manner, and is for a long time well borne by the stomach.

#### MONTANOA TOMENTOSA (*Llav. and Lex*—*Compositæ*).

*Habitat.*—Zihuatli, the Aztec name of this plant, signifies woman's medicine. It is quite common all over the republic, especially in the Valley of Mexico.

*Chemical Composition.*—Dr. Armendáriz has recently pointed out the following ingredients: Acid resin, 2140; neutral resin, 3026; chlorophyll, 27,500; organic acid (montanoic), 1560; vegetable wax, traces; gum and other principles, 2015; tannin, which colors green the salts of iron; mineral salts, 12,560; cellulose,

22,824; extractive matter, 10,110; essential oil and losses, 4705. Montanoic acid, first described by Professor Federico Altamirano, is considered the active principle of the plant, and to which its influence on the uterus is due.

*Physiological Action.*—A decoction of the leaves, given by the stomach, causes powerful uterine contractions. Montanoic acid, subcutaneously administered, produces intense pain at the point of injection, and contractions of the arterioles. For the latter effect the dose is .10 gramme, which does not cause toxic phenomena. The vaso-constrictor action of the acid is analogous to that caused by ergot. The difference lies in that zihuatli acts on the uterus, rather than on the arterioles, to produce a hæmostatic effect. Montanoa, it may be said, causes uterine contractions especially; ergot, contractions of the uterus and of the arterioles; while hydrastis affects the arterioles particularly.

*Uses.*—Zihuatli is used to increase the contractions of the gravid uterus and to enhance uterine subinvolution.

#### PSORALEA PENTAPHILLA (*Linn.*—*Leguminosæ*).

*Habitat.*—This plant grows in Querétaro, Guadalajara, Guanajuato, and other places. It is commonly called "contrayerba de Querétaro," or "whitw," or "aromatic contrayerba." The part of the plant used is the root. This appears in the form of a tuberous rhizome, four to eight centimetres long, of a brown color externally and white internally, very feculent, and having a peculiar odor. It is used by the laity as an antiperiodic and for toothache.

*Chemical Composition.*—According to M. Lozano, psoralea has the following composition: Water, 10,000; salts, 3750; fatty matter, melting at 60° C., 1880; gum, 6806; glucose, 1440; starch, 26,500; albumin, .100; cellulose, 28,750; a crystallizable acid, .400; psoraline (alkaloid), 9250; losses, 6154. Psoraline is a crystalline body of a white color, soluble in water and in alcohol, but insoluble in sulphuric ether, chloroform, and benzene. It has an aromatic odor similar to that of the root, and a bitter taste. It is precipitated by the alkaloidal reagents. With sulphuric acid, psoraline gives a violet color, which passes into green and afterwards into Prussian blue; with nitric acid it produces a light-greenish hue, which is changed to red by the action of chlorine and ammonia.

*Physiological Action.*—In doves, psoraline, in doses of from .25 to .50 gramme, subcutaneously injected, produces vomiting, muscu-



lar relaxation, and lowering of the temperature, and it may, therefore, be considered as an emetic and antithermic drug (Altamirano). According to the experiments of Dr. Tous-saint, made in the Instituto Médico Nacional, psoraline acts as an antithermic by influencing the nervous mechanism centrally.

*Therapeutic Uses.*—Although strongly recommended by the laity as an excellent antiperiodic remedy, Dr. Torres, who has tried it in the Hospital of San Andrés, found the drug of no value as such. The medicament reduced febrile temperature from  $1^{\circ}$  to  $2^{\circ}$  C. in the course of an hour, this depression lasting for about two hours. It has been employed in doses of .016 gramme. Psoraline may be considered as a good antipyretic, since it does not cause untoward effects.

ROUREA OBLONGIFOLIA (*Hook and Arn.—Conaraceæ*).

*Habitat.*—The common name of this plant is "chilillo de la Huasteca." It grows in the States of San Luis de Potosi and Vera Cruz especially, and also in other places. It is a creeper. Its fruits are eaten by certain birds (the species *Penelope purpurascens*), and the bones of these are said to be poisonous to dogs. I have made no observations in this respect. The root of the plant, however, is used to poison dogs, and also for tanning purposes, owing to the large quantities of tannic acid which it contains.

*Chemical Composition.*—According to Dr. Godoy, who has made a preliminary examination, rourea contains the following substances: Fatty matters, coloring matter, resin soluble in alcohol, resin insoluble in alcohol, tannin in abundance, a bitter principle, glucose, gum, and several other principles.

*Physiological Action.*—Four grammes of the powder administered to a dog by the stomach have produced tremors, general clonic convulsions, difficult respiration, paralysis, and dilatation of the pupil. These symptoms are slowly developed, appearing in the course of three or four days and lasting for a long time, this being especially the case in regard to the motor paralysis. In the frog, motor paralysis and cardiac disturbances are also observed (Altamirano). The plant has no use in practical medicine at present. It is employed for the purposes already mentioned.

SENECIO EHREMBERGIANUS (*T. W. Klatt—Compositæ*).

*Habitat.*—This plant grows in the States of Puebla, Zacatecas, Guanajuato, and others. It

is commonly called "yerba de la Puebla" and "izcuimpatli." Rio de la Loza gives the following

*Chemical Composition.*—Water; fatty matters; resin, gum, senecic acid (active principle); salts. Senecic acid occurs as a colorless, odorless, insipid liquid, very soluble in water, alcohol, and sulphuric acid. It reduces by heat the salts of silver, gold, Fehling's solution, etc. It is not precipitated by chloride of iron, chloride of barium, chloride of calcium, lime-water, sulphate of magnesium, etc. It reduces the bichloride of mercury to calomel. It gives no color with the concentrated acids. It easily forms senecates by saturation or by decomposing the carbonates. The alkaline senecates are deliquescent. With acetic acid and a base acetoseneccates are easily formed, these appearing in a crystalline form. This would prove to be the most useful form for pharmaceutical preparations.

*Physiological Action.*—The aceto-senecate of baryta, after a dose of .40 gramme, subcutaneously administered, produced death in a dog in the course of three hours.

THALAUMA MACROCARPA (*Zuc—Magnoliaceæ*).

*Habitat.*—Thalauma is popularly known as "yoloxochitl," or "flower of the heart." It grows in the State of Morelos, but particularly near Motzorongo, in the State of Vera Cruz.

*Chemical Composition.*—According to Dr. Armendariz, yoloxochitl contains: Fatty matters, acid resin, indifferent resin, essential oil, coloring matter, a bitter extractive, thalaumine, a resinous glucoside, and salts.

*Physiological Action.*—Experiments made with the extract of the seeds have shown that thalauma alters the red blood-corpuscles, coloring them black, produces phenomena of asphyxia, modifies the pulse-rate and the arterial pressure, and causes also decided nervous disturbances. Death is caused by cardiac paralysis (Altamirano).

*Therapeutic Uses.*—The tincture of thalauma, prepared from the flowers, is commonly used for palpitation of the heart. At present it is being tried in the hospitals.

THEVETIA ICCOTLI (*D. C.—Apocinaceæ*).

*Habitat.*—This plant, commonly known under the name of "codo de fraile," or "yoyote," grows in the States of Morelos, Michoacan, and other places.

*Chemical Composition.*—The seeds—the part of the plant in common use—contain chiefly fatty matters and thevetin, a glucoside, the active principle. Thevetin is highly poisonous,

crystallizing in colorless, brilliant plates, having a bitter taste. It destroys sensibility when placed upon the tongue, and it also acts as a powerful irritant to the nasal mucous membrane. Thevetin is little soluble in water, readily so in alcohol, and less so in sulphuric ether. Thevetin is changed into *thevetinine* (?) by acids. This last body reduces Fehling's solution.

**Physiological Action.**—Thevetin is easily absorbed by the stomach and from under the skin. It acts especially upon the heart. In the dog, in doses of 3 milligrammes, it produces, in the course of fifteen minutes, an irregular pulse, a rise of the arterial pressure, vomiting, insalivation, contraction of the trachea and probably also of the bronchial tubes, a frequent respiration, and phenomena of asphyxia. In about forty minutes there occur a depression of the arterial pressure and paralysis of the heart. It does not cause diuresis. The heart is arrested in systole. In the frog, the heart, before it is finally arrested, undergoes a period of paralysis or partial relaxation of its ventricular walls.\*

**Therapeutic Uses.**—The medical uses of the plant have not been studied as yet. The drug may be classified as an emeto-cathartic and cardiac paralyzant. It appears to be contraindicated particularly in mitral affections of the heart.

CITY OF MEXICO, August 28, 1893.

#### DIPHTHERIA, THEORETICALLY AND PRACTICALLY CONSIDERED.

A PAPER READ BEFORE THE SCHUYLKILL COUNTY MEDICAL SOCIETY.

BY JAMES STRATTON CARPENTER, M.A., M.D.,  
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THE present trend of scientific investigation in the realm of medicine is towards the discovery of a local cause for disease. It is the supreme effort on the part of investigators to isolate the disease-bearing germ and to learn its natural history,—its *habitat*, its *modus vi-*

*vendi*,—and in so doing to arrive at the starting-point of the diseased process before it shall have become a systemic affection. *A priori*, if such results were obtainable, it would very naturally simplify our methods of treatment; but practically, as we consider the various results thus far reached by scientific men, can it be asserted that in each instance where a local origin has been satisfactorily determined upon as the source of constitutional infection we have arrived at any surer methods of treatment in that disease, or have observed any lessened mortality as the result of that treatment? Does the discovery of the typhoid germ deserve the credit of the cold-bath treatment instituted by Brandt for enteric fever, a treatment which has certainly robbed that dread disease of its terrors and reduced its mortality to *nil*? Has the knowledge of a pneumococcus in any degree lessened the number of deaths which annually occur from pneumonitis, and is it not a fact that statistics show, if anything, an increased mortality from that disease in these days over what obtained from older methods of treatment, when bloodletting had not yet fallen under the ban of "higher medical criticism"? Given a case of cholera, or of tuberculosis, or of enteric fever, in each of which diseases the specific germ has been determined, and have we in any respect benefited our patient through the knowledge, experimentally determined, that their respective bacilli stand in a causal relation to each of these diseases? Have we ascertained that the "tuberculin" possesses any power over the tubercular process, and have we thereby acquired any greater control over cholera or enteric fever than might be due to the teachings of a rational therapeutics entirely uninfluenced by any germ theory of disease? Let them isolate the *materies morbi*,—the germ,—make cultures thereof, and inoculate the guinea-pig therewith, producing the same disease from which these cultures were originally obtained, and while an interesting study has been satisfactorily rounded out to its legitimate conclusion, in what respect is suffering humanity aided thereby? The utility of such investigations, it seems to me, must be limited to their bearing upon pathological processes in the light which they throw upon the natural history of disease, as well as the lessons they teach in regard to preventive medicine, but nothing more. As an example, take diphtheria. If there be a disease well calculated to try the resources of the physician to the utmost, and to test his faith in the saving power of medicines, it is to be found here. Attacking its victims often insidiously, it lies in ambush, as

\* We may say in this connection that as far back as 1879 an elaborate research of the physiological actions of *Thevetia iccotti* was made by Dr. David Cerna, constituting one of the inaugural dissertations to which a prize was awarded by the University of Pennsylvania. The paper was published in the *Philadelphia Medical Times* of May 24 and June 7, 1879. The chief conclusions arrived at by Dr. Cerna concerning the actions of thevetin appear to be confirmed by Dr. Altamirano. We are also acquainted with the fact that among the laity in Mexico an ointment made with the powdered seeds of thevetia is used in the local treatment of hemorrhoids.—ED.

it were, until with irresistible onset it invades all the air-passages, and, despite every effort made to combat it, proves fatal in an incredibly short space of time; or, with more gradual onset, it makes itself known by the usual symptoms of malaise and fever, and, running a more protracted course, takes possession of all the outposts of the respiratory tract with a tenacity that knows no yielding, until the life-centres, poisoned by the very fluid that should bring renewed vigor, fail to exercise their functions, or the heart-muscle, paralyzed by the baleful effects of the diphtheritic poison, gives up the struggle, perhaps at the very moment when we had esteemed the battle won in the eradication of all the local evidences of the disease. And why should statistics show such terribly fatal ravages of diphtheria in these enlightened days of scientific investigation, when the nature of the disease has been so thoroughly worked out that the Klebs-Loeffler bacillus is regarded by the medical world at large as the causative factor in the disease, and the theory of its local origin is practically unquestioned? Can we regard these investigations of any *real* import to disease-stricken humanity, if, while experimentally determining a specific germ to be the causal agent of diphtheria, the remedy is lacking whereby the system may be freed from that germ before its multiplication within the tissues shall have made cure an impossibility? "The cry of Rachel weeping for her children," and who is not to be comforted by promises of still more extended laboratory research, must be met with something that will insure a lessened rate of mortality in this dread disease of childhood, that destroys far too many victims, if the boasted advances in medical science of to-day are to win the confidence of those for whose benefit they were undertaken.

Does not, on the other hand, a close study of disease itself, and especially of those cases which have proved fatal in spite of the best-directed efforts, yield more substantial fruits than unlimited investigations as to the nature of certain bacilli, and result in more positive knowledge, which means improved methods of treatment, of the diseases in question? We cannot be blind to the good results thus far obtained by bacteriologists, and the world at large must ever remain debtor to such master minds as Koch, Pasteur, and others of that ilk. But we should not, on that account, abandon the direct teaching of clinical investigation, because, forsooth, the latest dogma propagated from the laboratory of even such a man as Robert Koch tends to overthrow that faith which the humblest practitioner should never

surrender unless forced thereto by every proof which clinical study alone affords. We must, then, while learning the lessons which bacteriology teaches, not be led astray by that ill-timed enthusiasm which would make of this mortal clay something which even its Creator never purposed it to become,—invulnerable to disease,—but apply those teachings to the best defence of that system which at every avenue we know to be so liable to attack. In other words, the same truism is to be stated here which may be declared of not a few diseases to which mankind is heir: there is no specific remedy for diphtheria. In spite of all the investigations made into the nature of the bacillus of diphtheria, or of the disease itself, no one has yet discovered a single remedy which, *facile princeps*, can in every case successfully cope with that arch-enemy of childhood and cause it to be proclaimed to the medical world as an infallible antidote to the diphtheritic poison. In spite of a general acceptance of the theory of the local origin of diphtheria,—a thesis first defended in a paper read before the American Medical Association at its meeting in Buffalo, N. Y., in 1878, by the writer's father, Dr. John T. Carpenter,—we must yet explain those cases of the disease which arise without any apparent local infection, and thus oppose themselves to that theory, presenting at the onset all the symptoms of a general disease with secondary manifestations in the tonsillar region. Clinical studies, however, including cases of each variety, must, when faithfully carried out, prepare the physician for meeting whatever complications may arise with the best possible measures for the relief of his patient, and, while reposing confidence in no special remedy, lend him such resources as will not fail him when the hour of need is sorest. He will not be biassed, either, towards the local view so strongly as to withhold the much-needed general remedies from his little patient, nor will he neglect the use of those topical remedies which are most certainly demanded in the careful management of every case of diphtheria, even though his prejudices should largely incline him to the belief in the general character of the disease.

These reflections are the expression of the writer's convictions based upon the results of a general practice of the past ten years, covering repeated outbreaks of the diphtheritic disease in which most malignant types of cases have been successfully treated, while others equally malignant have failed to yield to the measures employed for their relief. The treatment of diphtheria pursued by him in the case which must be his apology for this paper will best be

described in connection therewith, and while presenting nothing startling in its novelty, will, he thinks, prove of interest in demonstrating what he believes to be the cardinal principle in the successful management of the gravest of diphtheritic complications,—heart-failure,—viz., the employment of “the ounce of prevention,” which, in these cases, is doubly worth “the pound of cure.”

CASE.—Edna B., a child of eleven years, was seized with scarlatina in the first week of April, which ran its course without any serious features. In two weeks from the onset of the attack she was convalescent, and in leaving her to maternal care strict injunctions were given that the child should not leave the room until desquamation was entirely completed, as the weather was very raw, and the lower parts of the house so damp that nephritis would certainly follow any such imprudence. Ten days later I was recalled to my patient, and found her again in bed, complaining of pains in her limbs and exhibiting an œdematous condition of the lower extremities. On examining the fauces, both tonsils and the naso-pharynx were found to be covered with a dirty grayish membrane which concealed the healthy mucous surface from view. Urinary examination revealed fifty per cent. albumin and some traces of sugar. A gargle was prescribed containing carbolic acid and Monsel's solution, and, internally, corrosive sublimate,  $\frac{1}{4}$  grain every two hours, with a highly nourishing diet, and whiskey as a needed stimulant. For three days this treatment was continued, but was then abandoned, as the ptyalism occasioned by it was so distressing that it was impossible to continue it longer.

In spite of the above measures the disease had steadily progressed, and now the isthmus faucium was completely blocked with what may only be characterized as a hideous mass of gangrenous tissue, which produced a terrible fetor, permeating the atmosphere of the entire dwelling with a sickening odor readily perceptible to one entering the house two stories below that on which the sick-room was situate. The surroundings of the patient could hardly have been worse for such a case. The sick-room was a small partition under the eaves, eight by ten feet, and the ceiling so low that one could stand upright in about half that space. There was but one window for ventilation, but the determined efforts of the child to get well negated these disadvantages and made up for all the deficiencies of her nursing, as she partook willingly of large quantities of nourishment all through the attack, and submitted to

all the measures necessary for her relief, however trying.

When compelled to abandon the use of corrosive sublimate, I felt as though the nearest approach to an antidote to the diphtherial poison that I knew of had been discarded, as I have employed it the past year or two in some very malignant cases and with marked success. Here was as formidable a case, however, as I had yet faced, and the chances of successfully opposing it were, in my opinion, reduced to a minimum when compelled to abandon the mercurial treatment. The diphtheritic deposit extended over the naso-pharynx, and the tonsils and soft palate were completely covered by it, the uvula being enveloped in a gangrenous mass that, with the hypertrophied tonsils, seemed to fill up the entire lumen of the pharynx. The pulse was feeble and very rapid (140 per minute), and the added difficulties of an acute parenchymatous nephritis seemed to render hopeless the indulgence in medication of any sort whatever. The indications to be met presented themselves to me as follows: the direct effect of the unavoidable absorption of so much septic material upon the red blood-corpuscles could only be met with iron, and iron in large doses, frequently repeated, if the desired effect was to be obtained.

Before such a large absorbing surface as that already involved could be freed from the putrid material implanted upon it, the added danger of the probable paralyzant effect of the diphtheritic poison on the heart-muscle must needs be guarded against, a complication that is most fatal in this disease, diphtheritic laryngitis not excepted. I accordingly prescribed the muriated tincture of iron in the dose of 15 drops every two hours and  $\frac{1}{8}$  grain of strychnine every six hours, as a commencing dose, and a teaspoonful of brandy every two hours; for topical use, a fifty-per-cent. solution of liquor sodæ chlorinat. was ordered for spraying the throat as frequently as every half-hour, and each morning and evening I made a thorough “swabbing out” of the throat, using the same solution. After the institution of this treatment, as there was no perceptible improvement in the child's condition from day to day, I rapidly increased the dose of the iron to 35 drops every two hours, and the strychnine granules were given every four hours; the brandy was administered each hour, and large quantities of milk and broths were taken each twenty-four hours. Under this increased dosage, continued for four days successively, I at last was able to observe the loosening edges of the gangrenous mass revealing the healthy mucous membrane

beneath, and in two weeks after the relapse noted she coughed up the entire cast of the naso-pharynx, which, unfortunately, I did not see, as the mother, unable to bear the stench, had burned it along with some infected cloths. Inspection showed the throat free from all membranes and *the uvula missing*, dissected out far more neatly than the surgeon's knife could have accomplished it. It is hardly necessary to particularize longer on the progress of this case, except to state that to-day—six months from my last visit—you have seen her perfectly well and entirely free from all traces of her recent illness, save in the absence of her uvula. In spite of the severity of the conditions met with, it is satisfactory to note that there was an entire absence of all paralytic conditions, even the paralysis of deglutition, often observed after mild cases of the disease, having been avoided. The function of the uvula, about which there is as much uncertainty as attends that of the appendix vermiformis, receives no enlightenment from the history of this case, except in a negative way. If, as some writers maintain, it is concerned with vocal function, then certainly its loss would interfere to some extent with vocalization. But there is no such effect to be noted in this instance, the child's voice in no way suffering alteration subsequent to her illness. A study of the principal features of this case teaches us, first, the importance of meeting "the indications" promptly and in a decided manner; and, second, of endeavoring to prevent the occurrence of what is recognized as a fatal complication when it arises,—cardiac paralysis,—by anticipating its onset and guarding against it, so far as may be done, by the use of *strong* doses of that very best of heart tonics in asthenic diseases, strychnine. Having been accustomed to treat all grave cases of diphtheria during the past two years with corrosive sublimate internally, and having saved thereby cases which would certainly have proved fatal under more usual methods of treatment, since I employed it as a *dernier ressort* when "the iron and potassium treatment" had utterly failed to help the patient, I lost no time in using it here. For the first time in my experience with this most valuable remedy was I obliged to discontinue it on account of the ptialism it induced. And lest the criticism be made of its administration in the dose of  $\frac{1}{4}$  grain every two hours, let me state that I always have used it in proportionate doses in every case of the disease. In a recent case of malignant character, where an infant of thirteen months was the patient, I administered  $\frac{1}{4}$  grain every two hours,

increasing it to  $\frac{1}{2}$  grain, as the conditions demanded. The child recovered.

As the necessities of each case we treat must be our guide in the administration of the required remedy, so is it in diphtheria. For a patient suffering with violent pain, we should not think of administering ordinary doses of an anodyne by the mouth, but our first thought would be to control suffering with morphine hypodermically administered, and in such a dose as would meet the requirements of the case. In malignant cases of diphtheria the system shows a tolerance for the bichloride that is surprising, and it can be persisted in without fear so long as the septic conditions demand its continuance. My experience with it has convinced me that it is the remedy on which the greatest reliance may be placed, and when, as in the present instance, its constitutional effects are unfavorably manifested, there must be an idiosyncrasy on the part of the patient explanatory of it.

Obliged to discontinue this remedy, then, to what could I turn but to the iron and chlorate of potassium treatment? The latter was contraindicated on account of the coexistent desquamative nephritis, and if the chloride of iron were to accomplish any good at all, it must be from heroic doses. A tolerance of 15 drops was obtained as a commencing dose, and rapidly increased to 35 drops, every two hours, before the desired change in the patient's condition was noted, and not until several weeks after the entire disappearance of the membrane from the throat was the dosage lessened.

The second point which, in the writer's opinion, should be dwelt on more prominently by the authorities on children's diseases is the necessity for the early administration of strychnine in all cases of severe diphtheria. The two complications which are most to be feared in this disease are diphtheritic laryngitis and paralysis of the heart-muscle. In the former, whenever it may occur, we have the operation of tracheotomy as a possible remedy; in the latter we are utterly powerless when taken by surprise, and nothing can avail to save the life of our patient. Strychnine, however, when early administered and pushed even to the manifestation of its physiological effects, is amply sufficient for this terrible crisis, and has certainly been the means in my hands of averting a fatal termination in not a few instances. In the case under discussion the pulse-rate reached 160 to 170 per minute, and maintained that rapidity for several days, but the heart was all the while under the tonic and sustaining influence of the strychnine, and eventually that run-

away organ was brought under control. In another case of this disease, which terminated fatally from diphtheritic laryngitis eleven days after its seizure with scarlatina maligna (the patient an infant of eighteen months), finding the heart-muscle failing,  $\frac{1}{10}$  grain of strychnine was given, the dose being increased to  $\frac{1}{8}$  grain, until the extended head, rigid in tonic spasm, warned me that the full effect of the drug was obtained at the same time that the danger of cardiac paralysis was overcome; but for the extension of the membrane to the larynx several days later, it would certainly have saved the little patient's life. And not only in diphtheria, but in every instance where the failing pulse evidences the more dangerous condition of a failing heart-muscle, should strychnine in large doses be depended on as the sovereign remedy. In the latter days of typhoid fever, when we find a degenerated heart-muscle weakening under the continued strain of a high temperature, strychnine is especially valuable. In a recent case of this disease I employed it in the dose of  $\frac{1}{10}$  grain every four hours for several days, with the result that my patient, a young man of twenty-eight years, is now in good health, instead of having succumbed to what bade fair to be a fatal collapse when this drug was resorted to. It is true that there was some feeling of uncertainty as to his tolerance of such a dose, and on the third day a fully-developed *risus sardonicus* gave me a hint that I did not fail to act upon.

Together with strychnine as a safeguard against cardiac failure, a rigid observance of absolute rest on the part of the patient must be enforced. The head should not be permitted to be raised from the pillow, and the slightest exertion should be guarded against, not only during the attack, but for as long a time subsequently as the heart action, by its abnormal rapidity or other features, may indicate the need of care and watchfulness. In this way alone may we insure ourselves against possible accident.

What, then, has "the local theory" done for diphtheria? may well be asked. Are there many, like the physicians in charge of the Friederichshain Hospital, of Berlin,\* who, with the courage of conviction, have instituted no drug treatment for the management of diphtheria the past two years? Accepting the local theory in its fullest meaning, *local* treatment only is their cry, let constitutional needs take care of themselves as best they may! "And yet there were sixty-four per cent. of cures," it

is remarked, whether surprisedly or in a commendatory way the reader is permitted to decide for himself. Are there many who will assume such a responsibility as this in defence of theory, and calmly withhold the needed cardiac stimulants from a system debilitated by disease, although they may find local measures powerless to prevent a constitutional infection and all that is entailed thereby? And yet that is the logical outcome of the position taken by the germ theorists to-day, if we are to believe all they would lead us to infer. Their theories are plausible, but when weighed in the balances of actual clinical experiment they are found wanting. How many of the sixty-four per cent. of cures recorded in this disastrous experiment were mild cases and what proportion of the thirty-six per cent. of losses were of malignant character the report does not show; but if this be the result of what a *local treatment only* in diphtheria is able to effect, it can never be satisfactory to him whose efforts are directed towards the employment of the most rational procedures in the never-ending conflict with disease. The writer of this article regards anything beyond a five per cent. mortality in diphtheria as more than he is willing to confess himself responsible for, and responsible only because his utmost efforts, both in the direction of a local and systemic treatment, failed to overcome all the difficulties in the way; while, if he omits those cases of diphtheritic laryngitis from his table of losses, where operative interference was refused by the parents of the child, his mortality would sink to an insignificant figure. During the past two years only one case has proved fatal out of a large number of severe and so-called malignant forms of the disease, a result due almost entirely to the employment of the bichloride of mercury treatment.

As there is no "specific" for the diphtherial poison, we must occasionally meet with cases that will defy our best efforts; yet the battle has not been well fought, the best interests of our little patients have not been loyally upheld by any one who fails to perceive *all* the aspects of each case that comes under his care, and who neglects to guard against every pitfall that lies scattered along the course of this disease. It is a gantlet that must be run by the tottering feet of childhood, in the large majority of cases, and every step of the perilous way should be provided for by the physician, since nature furnishes no defence to these little patients of themselves. And he who is unmindful of the dangers to be met, improvident for the future demands of the system for strong support, will

\* THERAPEUTIC GAZETTE, January, 1894.

surely find that the moment will come when the wearied heart fails for lack of the much-needed stimulant, and another victim will be sacrificed, either through simple failure to protect his charge against possible misfortune, or, worse, through a blind adherence to a theory which contraindicates the employment of internal medication because experimentation has determined that *local* measures alone are compatible with the pathogenesis of this disease!

To sum up the whole matter, there can be, of necessity, *no routine treatment* for the disease. Some cases may require only local measures to arrest the disease, but even in these rest in bed should be insisted upon as of, perhaps, vital import to the patient. Heart-failure is equally possible in the mildest and the severest forms of the disease. One case the writer recalls, where a bright little child complained of "sore throat," but was not thought to be sick enough to be kept in bed by the attending physician, a homœopath, and while at play in the sick-room several days later suddenly died in syncope. The circumstances attending the death of the late Bishop Brooks are of so recent occurrence as to need but brief mention. Suffering from a slight cold and "sore throat," he was not supposed to be in any condition necessitating anxiety until the fatal attack of heart-failure was induced through a prolonged attack of coughing, the weakened cardiac organ, primarily affected by the diphtherial poison, not being able to bear the strain thus brought upon it. Are these examples not amply illustrative of the necessity for rest even in the mildest forms of the disease? And do they not also teach the futility of local measures being depended on to combat the general features of the disease? Is it reasonable to expect that topical applications to the throat are going to favorably affect a weakened heart-muscle, or prevent the catastrophe when the already damaged heart may be called upon for some unexpected exertion, or to withstand some unforeseen burden? Certainly not. If, then, the indications plainly point towards the need of rest in bed, even in mild cases of diphtheria, and the administration of such a heart-tonic as strychnine as a safeguard against heart-failure, when we come to the malignant cases can we in reason refuse to meet the symptoms of general septic infection with their appropriate remedies, and say we shall first destroy the local cause of this outbreak by the proper local treatment, and utterly fail to take note of anything beyond? Local treatment is of value here, as a matter of course, but it must be sup-

plemented by measures designed to overcome the septicæmia occasioned by the local lesion. It is in these cases that the bichloride treatment has been of especial value, accompanied by full doses of alcohol. But where, as in the case reported, mercury cannot be tolerated, then iron in heroic doses must be the dependence, and pushed to the fullest limit of tolerance by the stomach. By such measures as these may we hope to lessen the mortality-rate of this disease, and, unfettered by any blind devotion to a theory, work out the salvation of those intrusted to our care without fear and trembling, but with the fullest prospects of ultimate success.

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*WHAT CAN BE DONE IN THE DIAGNOSIS  
AND TREATMENT OF GASTRIC  
DISEASES WITHOUT THE  
USE OF THE STOMACH-  
TUBE?*

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BY A. L. BENEDICT, A.M., M.D., BUFFALO, N. Y.,  
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THIS question was brought forcibly to my attention by the remark of a physician who was hesitating before submitting to lavage. "Doctor," said he, "remember that a doctor doesn't like to be hurt." In this sentence, a capital illustration of the fact that a sick physician is not the ideally passive patient whom we like to encounter, was implied the aversion which nearly all patients feel to the use of instrumental or mechanical means of treatment. Objectively considered, the stomach-tube is almost absolutely safe and reliable; its use requires rather the skill of experience and good judgment than manual dexterity; it clears up, by the aid of chemical tests and inspection, the mysteries of a diseased organ; it is a valuable and rational therapeutic agent. From the patient's point of view, however, the passage of the tube is an extremely disagreeable, if not actually painful, procedure; it is more or less shocking to an æsthetic nature, and it is regarded almost as a last resort. The professional and, to an increasing degree, the lay conception of the physician who essays to treat stomach troubles in a modern and scientific fashion, is as an appendage—a very intelligent and important one, no doubt, yet distinctly an appendage—to a long, smooth rubber tube. In regard to the feelings of the patient, I believe that a middle course should be adopted between a weak concurrence with every whim and aversion and an arbitrary demand of absolute compliance with dictates which may be quite as

much whims as any notions of the patient. It is often wiser, after having given our advice conscientiously and clearly, to allow the patient to select a slower route to health or a less radical cure, if the sacrifice, in his opinion, is compensated for by additional comfort or safety or by an important pecuniary or social advantage. It is, at any rate, interesting and profitable to note the limitations to the use of the stomach-tube and, by contrast, the circumstances under which it becomes of paramount value.

The factors to be studied in a diseased stomach are (1) sensation, (2) absorption, (3) motion, (4) secretion, (5) organic changes, (6) foreign elements.

The sensation of the stomach, whether normal or perverted, can, of course, be determined only from the statements or gestures of the patient, although we must discount the overdrawn descriptions of suffering on the part of the hysterical and perhaps add to the phlegmatic utterances of others.

Absorption is estimated by the administration in capsule of .10 to .20 (ten to twenty centigrammes) of potassium iodide, which is quickly dissolved, and is eliminated in the saliva in from eight to fifteen minutes normally. This time includes the delay of melting the capsule, dissolving the salt, its absorption, circulation, and elimination, and the expulsion from the mouth. In order to have as little variation as possible, the following details should be attended to: The capsules must be thin in order to melt quickly;\* they must be freshly filled in order to prevent deliquescence. The patient must swallow the capsule quickly, with a constant quantity of water at a uniform temperature. The outside of the capsule must be free from iodide, and it is well to test the saliva immediately after swallowing to make sure that no iodide has escaped directly into the mouth and that there is none in the system from previous medication. The saliva is taken in test-tubes at three- to five-minute intervals. One or two drops of nitric acid are added to each tube to liberate iodine, and a little starch-paste or dried scale of starch dropped in. The starch forms with iodine a beautiful purple or blue tint,—purple if very little iodide has been eliminated, blue if the reaction is more marked. To save time I

sometimes give patients a set of vaccine vials in their wooden cases, numbered 5, 10, 15 to 30 (minutes), and have the saliva brought to me for the tests.

The motor power of the stomach, or rather the peristaltic movement which empties the viscus, is tested by administering salol, which remains unchanged in the acid juice of the stomach, but is decomposed into its salicylic and carbolic constituents in the alkaline secretion of the small intestine. Thence the salicylic acid is absorbed; it passes through the portal, pulmonary, and aortic circulation, reaches the kidneys, and is eliminated in the urine. This process, like that of the iodide test, is complex, yet so rapidly are the vital functions performed that salicylic acid is found in the urine long before the bulk of the stomach contents have passed through into the intestine. Therefore, notwithstanding the delay of overcoming the acidity of the chyme in the duodenum and the devious course from intestine to bladder, the test represents the first leaking through the pylorus. The salol is given in powder or wafer with the last mouthfuls of the meal. Usually a gramme is given, but this dose has caused death in one instance, and I have found fifty centigrammes sufficient. To prevent too great dilution I direct that the urine be passed immediately after the meal and thrown away. The urine should then be saved forty-five minutes, one hour, one hour and a quarter, two hours, and three hours after the meal. With the 50-centigramme dose of salol salicylic acid is found occasionally in the forty-five minute samples, in the majority of the hour samples, almost always in the hour and a quarter samples. The urine passed from two to three hours after a meal usually gives the most marked test, thus supporting the old idea that two or three hours is the time to be allowed for gastric digestion in estimating the intervals of feeding with light diet or in administering remedies designed to act particularly on the intestine.

Although experimentation by Ewald and others has shown that one hour and a quarter is the extreme normal limit of delay in the excretion of salicylic acid, it has not been proved that the delay is due solely to insufficient gastric peristalsis. Huber has proposed to modify the test by determining the time at which salicylic acid finally disappears, and he considers that if it is found more than twenty-four hours after the meal with which one gramme of salol is taken, the stomach is deficient in motor power. Yet in a case of non-acid dyspepsia in which salicylic acid appeared in the urine only

\* I was recently furnished with capsules which required twenty-five minutes to melt. To guard against error from this source, it is well to make a control test in lukewarm water, coincident with the experiment on the patient.



half an hour after the meal at which fifty centigrammes of salol were given, I found the same reaction in several samples of urine voided at various times up to forty-eight hours. Here were contradictory results, which I would explain on the ground of insufficient intestinal absorption or of some delay in elimination. The case was cured by attention to the general health and by supplying the needed hydrochloric acid for a week or two.

The test for salicylic acid is very simple. To the urine in a test-tube or in an ordinary vessel add, drop by drop, a solution of ferric chloride. The tincture will prove satisfactory, though the liquor is usually recommended. The principal source of error consists in adding too much ferric chloride. In the presence of salicylic acid a cloudiness and then a purplish-red color develops.

Some idea of the motor power of the stomach may be gained from the general musculature and energy of the patient, but the inferences may be fallacious.

The tube affords comparatively little information as to the movements of the stomach. One patient may force a jet of water out of the stomach, through the tube and across the room, while another may be unable, even though retching violently, to do more than alter the level of fluid in the funnel. The natural inference is that the former is strong, the latter weak, in his gastric muscles, but nervous excitability, reflex contraction, and the auxiliary abdominal and diaphragmatic compression have much to do with the phenomenon, and, after all, the throwing of a jet of water is only an athletic feat of the stomach and no guarantee that its normal work will be properly performed.

Klemperer has proposed to introduce a hundred cubic centimetres of pure olive oil into the stomach, and, after two hours, to siphon away what remains and compare the diminution in volume with a standard. Klemperer himself admits the inconvenience of this method, and it would seem impossible to rely on getting any positive results from the use of so small a quantity of fluid, which, nevertheless, is twice the usual purgative dose of olive oil. I have several times heard watery solutions rushing through the duodenum during lavage, and have removed much less than was introduced. In one case I kept a record of the amounts of water used so as to determine the loss. In each instance the water was siphoned away as soon and as thoroughly as possible, and thus loss by absorption was reduced to the minimum.

### *Lavage Six and a Half Hours after Eating.*

Introduced. Cubic centimetres.	Removed. Cubic centimetres.
1200	600
1600	1150
1400	1250
1400	400
200 (stoppage by raisin dis- lodged by the 200 cubic centimetres).	750
5800	4150 = 1650 cubic centimetres lost.

### *Lavage Two Hours after Breakfast of Piece of Bread.*

Introduced. Cubic centimetres.	Removed. Cubic centimetres.
1600	1175
1400	1200
1600	1400
1600	1400
1600	675
400	900
400	650
400	350
400	400
9400	8150 = 1350 cubic centimetres.

### *Lavage; Stomach Empty.*

Introduced. Cubic centimetres.	Removed. Cubic centimetres.
1300	1150
1600	1100
2000	1600
1600	1400
400	325
6900	5575 = 1325 cubic centimetres.

The conclusion is, that during the course of ordinary lavage in a person with only functional trouble, about fifteen hundred cubic centimetres of water were lost, doubtless partly by absorption, but largely by passage into the intestine. Now, while the olive oil would be practically unabsorbable from the stomach, its stimulant action on peristalsis would be relatively greater than that of water, and we would expect most of so small a volume as one hundred cubic centimetres to disappear in the course of two hours. However, it must be admitted that, if in any given case a considerable quantity of the oil could be recovered after two hours, it would be the best possible proof that the stomach was deficient in motor power. Unfortunately, the converse does not hold good, for we should expect even an inactive stomach to get rid of one hundred cubic centimetres of a fluid used elsewhere in therapeutics for the stimulation of peristalsis.

The conclusion seems obvious that the stomach-tube is practically useless for deter-

mining the motion as well as the sensation and absorption of the stomach, except that the chemical examination of the stomach contents assists in determining the motor and absorptive power. It is in the investigation of the remaining functions of the stomach,—the secretions and the course of digestion,—that the tube becomes important. It is a truism that chemical processes can be determined only by chemical tests. The alternative confronts us, therefore, of proceeding by guess-work or of obtaining a portion of the stomach contents for analysis. We may get a sample of chyme by inducing vomiting, by having the stomach-bucket or sponge swallowed and withdrawn, or by expression and suction through the stomach-tube. Of these means, the use of the tube is by far the least distasteful and the most practical. Still, in weak patients with irritable stomachs, who vomit frequently, we may avail ourselves of the stomach contents accidentally furnished and avoid the use of the tube.

Günzburg has proposed to estimate the rapidity of albuminoid digestion without recourse to the tube, by giving 10 to 20 centigrammes of potassium iodide in a closed gelatin capsule or in a small piece of rubber-dam tied with fibrin. When the gelatin or fibrin is digested, the iodide is liberated and then absorbed, and eliminated in the saliva. Günzburg's test, however, is like an equation with three unknown quantities. Finding iodine in the saliva tells us that the fibrin or gelatin has been digested and the iodide absorbed. But we do not know how much time has been consumed in absorption, nor how much hydrochloric acid there is in the stomach, nor what proportion of the albuminoids ingested has been converted into propeptone and peptone. Very often the filtered stomach contents, an hour or an hour and a half after eating, will contain a mere trace of albumin and propeptone and an abundance of peptone. So far the examination would indicate perfect digestion, but further tests and inspection will show an absence of hydrochloric acid and unchanged pieces of meat. The digestion of a thin film of gelatin or of a fibrin thread is no guarantee that there is enough acid left for the digestion of ordinary proteid foods. Thus, while Günzburg's test may give a fairly good general idea of the course of albuminoid digestion, it is neither analytical nor reliable.

Fats and carbohydrates are, in one sense, foreign elements in the stomach, since they are not digested by the gastric secretions. Sugars, being soluble, are normally absorbed from the stomach within an hour. Starch, whose cellulose has been ruptured by cooking, should be

digested by ptyalin in the stomach, also in the course of an hour, and the glucose resulting should be absorbed as soon as it is formed. The statement so often made that no starch should be found in the stomach contents more than an hour or so after eating applies to the standard meals of meat and cooked starch, but does not apply in cases in which bananas or any other form of raw starch has been taken. Raw starch must, of course, remain such until the stomach empties itself into the intestine.

Although I have said that our ideas of gastric secretion and digestion are reached by guess-work, unless we obtain a portion of the stomach contents and subject it to analysis, a little consideration will show that the word *guess-work* is used in no invidious sense, for, until the last few years, there was no other means of knowing the condition of the stomach, and there are few deeply-situated organs whose diseases we can even now diagnose except by inductive reasoning from present symptoms to pathological states previously observed post mortem. The questions which we aim to answer by chemical examination of the stomach contents are, in brief, these: 1. Are the fats and carbohydrates innocuous, or are they fermenting? 2. Are cooked starches changed into absorbable grape-sugar as rapidly as normal? 3. Are the three secretions of the stomach—rennet, pepsin, and hydrochloric acid—present in proper amounts, and do they properly digest albuminoids into peptone?

The first question is answered unfavorably by finding bacteria and yeasts microscopically and butyric and acetic acids chemically in the stomach contents. But, knowing that fatty and starchy substances have been taken, that certain foods of these classes habitually cause trouble, finding the stomach tympanitic with gas, and noting the eructation of sour gas or liquid, in which we may smell butyric and acetic acids, the diagnosis of fermentation is quite as well established.

The second question—as to the change of cooked starch into sugar—is not in itself an important one. If the pancreas can provide for any reasonable quantity of raw starch, it will probably not be overtaxed if the salivary function also devolves upon it. If the saliva is suspected of being at fault, let the patient chew a bit of raw potato, and spit into a test-tube, in which, after a few minutes, the ordinary sugar test will show whether or not enough ptyalin is secreted. Ewald's experiments have failed to find a single case of salivary incompetency even in patients with advanced dental caries or malignant disease of the mouth.

Failure of starch digestion in the stomach signifies, therefore, inhibition by some abnormal factor, which in most cases is an excess of hydrochloric acid or the presence of acid fermentation, both of which are included in the other two questions.

The third question—referring to the three secretions of the stomach—is the most important, but even this can be narrowed down in practice. Rennet is a substance of which we know almost nothing of practical importance. Ewald barely alludes to it, and his translator, Manges, sums up the researches of Raudnitz, Boas, Johnson, Klemperer, and Rosenthal in one sentence: "The result of these investigations is that rennet, like pepsin, is a constant constituent of the gastric juice, its absence indicates atrophy of the gastric mucosa; otherwise it has no practical significance." Quite frequently in infants, and occasionally in adults, there is noticed a tendency to the formation of large, hard curds from milk foods. I have in mind a woman aged forty, who vomited curds as large as butternuts, and with the toughness and peculiar agreeable odor of artificially prepared cheese-curd. This case was treated by temporarily withdrawing milk from the diet. I know of no means of determining clinically the exact excess of rennet—if, indeed, the question is a quantitative one—nor of directly modifying its secretion. Certainly the stomach-tube would have been useless to remove such large, hard masses.

Pepsin, like rennet, is an organic but unorganized ferment, a little of which seems to act as well as a good deal. It is almost always present in the stomach, and therefore it is rarely necessary to test for it. It likewise follows that its administration should be equally rare, but the great commercial value of pepsin shows how little this physiological principle is carried out in practice. Pepsin is the trump-card of a number of leading manufacturing pharmacists: their agents, so far as I can judge, are genuinely surprised to find a physician who uses pepsin in only two or three cases a year. Certainly, if the wholesale drug-houses had any fears as to the salability of pepsin, they would have it indorsed by those prominent physicians, who stand ready at all times to obtain successful results from new drugs, in blocks of twenty-five assorted cases. To give force to my own protest against the indiscriminate use of pepsin and to justify the suggestion that we may usually disregard it, let me call two witnesses. Ewald says, "To-day we know that pepsin is present in a very large number of cases, even when free hydrochloric acid is ab-

sent. . . . We should, therefore, restrict its administration to those cases in which its absence can be actually proved,—that is, to cases of advanced mucous catarrh and of atrophy." A. Lockhart Gillespie, of Edinburgh, in an article in the *International Medical Magazine* of October, 1893, expresses himself thus: "The determination of the presence of pepsin need be done only in very exceptional cases. Pepsin is rarely absent from the stomach contents. The amount of quackery indulged in in the prescribing of pepsin preparations is marvellous."

The conclusion seems obvious that the most important fact to be determined in the investigation of the gastric chemistry is the quantity of hydrochloric acid. It is even possible to classify the organic diseases according to the increase or diminution of this secretion. Gastritis of all grades, carcinoma, and usually dilatation are marked by a downward tendency in the secretion of this acid; ulcer by a marked increase.

Acute gastritis means corrosion of the stomach, either by hot water or some similar traumatism, or by an active poison. So far as the gastritis itself is concerned, the stomach-tube is clearly contraindicated. Although the old-fashioned stomach-pump is popularly associated with stories of poisoning, any form of tube is likely to become clogged, and the poison is usually best ejected by inducing vomiting. The comparatively rare cases in which narcotism prevents the action of emetics, or in which there may be a question whether the weakened stomach-wall would not be less strained by siphonage than by the act of vomiting, will not be discussed here. Subacute gastritis can scarcely ever require the tube, either for diagnosis or treatment, unless it is excited by foul fermenting soft masses. Chronic gastritis can usually be diagnosed from the state of the circulation and the history of the case; still the tube is desirable in order to verify the diagnosis, and is invaluable for treatment. Copious hot alkaline drinks taken before meals are of some service in stimulating the sluggish circulation and in washing away the tenacious mucus which dams up the feeble secretion of the glands, but one experience with lavage will teach us that the stomach must be filled and emptied several times before it is properly cleansed. Lavage with menthol vapor I have described in previous papers, and, although it would be egotistical to claim more than a further trial of this mode of treatment, it has seemed to do good in a number of cases of catarrh of the stomach.

Dilatation of the stomach can be diagnosed without the aid of the tube, although the alternation of tympany and flatness and the metallic tinkle of bubbles bursting in the half-filled stomach are valuable tests, possible only when the tube is used. In the treatment, the tube is almost indispensable to relieve the concomitant catarrh and to remove undigested remnants of food. Still, much good may be accomplished by giving predigested foods and antiseptics.

In cancer the continued absence of hydrochloric acid, as determined from the analysis of the gastric contents, is diagnostic but not pathognomonic, as was at first claimed. Few cases of cancer fail to present other indications of their nature, and, without confirmatory evidence, the non-acidity would scarcely warrant a positive diagnosis. Yet there are cases in which every hint as to the true condition must be eagerly sought. All treatment, except possibly operative, is palliative, yet the tube is useful for the treatment of the accompanying catarrh and fermentation. However, there comes a time when any mechanical interference is dangerous.

Subacidity, or occasionally non-acidity, is the usual condition in what may be termed, loosely, atonic dyspepsias. Yet, in the same day, two young married women consulted me, giving almost identical histories of gastric disturbance. One case proved to have a sufficient secretion of acid, the other almost none. Under different treatment both cases were relieved, showing that the conditions were essentially different. Thus it must be borne in mind that, although eighty or ninety per cent. of our dyspepsia cases will be relieved by the administration of hydrochloric acid, in each particular case we run a corresponding risk of ten or twenty per cent. of giving inappropriate treatment unless we examine the stomach contents.

Moreover, there is an acid neurosis, which we in Buffalo should never forget, since its clinical picture is so largely the delineation of our fellow-member, Professor Charles G. Stockton. This condition of supersecretion of hydrochloric acid may be suspected from the occurrence of dyspepsia in a neurotic individual, from the account of sharp gastric pain temporarily relieved by taking food, from highly acid eructations, and from the general characteristics of a state of over-excitement rather than depression of an organ. Still, the diagnosis needs the confirmation of chemical examination. The same neurosis culminates in peptic ulcer. The occurrence of a large hemorrhage scarcely needs the assistance of the tube to es-

tablish the diagnosis, and the treatment both of the neurosis and of the organic lesion consists of physiological rest of the stomach and such remedies as shall calm the overwrought secretory nerves. Ewald dismisses the question of using the stomach-tube in gastric ulcer with these words: "I refrain from introducing the tube in all cases of ulcer in which the diagnosis can be made in another way, and I do so, so much the more, since in these cases the examination of the stomach contents does not establish the diagnosis and since it does not aid us in the treatment."

In this review of well-known methods of diagnosis and treatment, the stand-point has been assumed of one who for some reason does not wish to use the stomach-tube. This reason may be excellent or it may be the poorest kind of an excuse. Do not understand me as deprecating the use of one of our most valuable aids to diagnosis and treatment, because I have endeavored to show how far it is unnecessary and how well we may diagnose and treat gastric diseases when some emergency or obstacle deprives us of this aid.

#### *LAVAGE IN THE TREATMENT OF GASTRIC DISORDERS, ESPECIALLY IN DISPENSARY PRACTICE.*

By JULIUS L. SALINGER, M.D.,

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THE mechanical treatment of diseases of the stomach is of very ancient origin. The Greeks were familiar with several methods of artificially evacuating the stomach. During the Roman empire a number of appliances had been invented to produce emesis. Among the most familiar ones was the vomiting feather of Pinna. Another equally well known instrument was the digitale vomitorium, a piece of soft leather, shaped like a finger, one end remaining open so that it could admit the finger, the other end stuffed with wool, being about ten to twelve inches in length. This was introduced into the pharynx and part of the oesophagus, and vomiting promptly followed. In the eighteenth century elastic catheters were used to introduce food and medicaments into the stomach. This was, perhaps, the origin of the stomach-tube. Hunter was familiar with this procedure. Bush, an English surgeon, was the first to actually use the stomach-tube, and he may be termed the inventor. In a case of opium-poisoning he inserted a long elastic tube

into the oesophagus and stomach, filled the stomach with water, then attached an ordinary syringe and pumped out the diluted contents. In the early part of the present century a number of instruments were invented by Jukes, Ward, Read, and others to serve as stomach-pumps. These appliances were, however, never in general use. It remained for Kussmaul, in 1867, to call attention to the treatment of gastrectases by lavage, and to again introduce the use of the stomach-pump and tube. Since that time numerous other uses have been found for the stomach-pump as well in diagnosis as in treatment, and many additions have been made to our literature, in which the mechanical treatment of the stomach has received the attention that it merited. (Leube, "Die Magensonde," Erlangen, 1879.)

The instrument now generally employed in lavage consists of a soft-rubber tube (about No. 32 of the French scale) with a funnel-shaped arrangement at the top to facilitate the introduction of liquids. Plain water, preferably lukewarm, is all that is usually required, although antiseptic antifermentative substances of all kinds have their special indications, such as salol, boracic acid, hydrogen peroxide, etc.

The method of using the tube is quite easy. The patient is told to open his mouth as wide as possible, the tube is placed over the base of the tongue into the pharynx, and he is told to swallow; while deglutition is going on, the tube is speedily, though gently, pushed down the oesophagus into the stomach. About eighteen to twenty inches is all that is generally required, and usually the tube has a circle marked upon it to indicate that it has entered the stomach. The patient soon becomes accustomed to the operation, and after the first or second trial it gives him no further inconvenience. In nervous or irritable patients the throat may be painted with a four-per-cent. solution of cocaine before using the tube. A dose of 30 grains of potassium bromide on the night previous to the morning on which the tube is to be used has proved of great value in the writer's hands to check the irritability of the throat and the general nervous manifestations of patients undergoing treatment by lavage.

Before using the tube the patient's throat should be carefully inspected. Stenosis of the pharynx, due to large hypertrophied tonsils, tumors, and cicatrices, may be absolute mechanical hinderances to the introduction of the stomach-tube. Never, under any circumstances, should force be used. Examination of the organs of respiration and circulation is

also necessary. Valvular disease of the heart, aneurisms, especially of the aorta, large pulmonary cavities, acute and chronic catarrh of the larynx, are contraindications to the use of the tube. In some instances symptoms of laryngismus stridulus and fatal syncope have been reported where these conditions have been overlooked.

The advantages of the use of a soft elastic tube over a hard and unpliant instrument are obvious. No injury to the soft parts of the oesophagus or stomach can result from the use of a soft instrument. Blood has never been noticed in the washings, as frequently occurred where a hard and stiff instrument has been employed. The soft tube is more durable and less liable to break than the gutta-percha sound (the ordinary hard instrument used). The soft tube also has some disadvantages. There are cases, especially in irritable patients, in which the tube, upon its introduction into the pharynx, readily curves and bends. In such instances the use of the soft tube is almost impossible without the assistance of a local anæsthetic (cocaine). With ordinary care there is little or no danger of entering the larynx with the stomach-tube.

The stomach-pump is now rarely employed, the tube taking its place for all practical purposes. The indications for lavage are twofold: first, as to diagnosis; secondly, as to treatment.

For diagnostic purposes, lavage is of use to determine the quality and quantity of the gastric juice. The quantity of fluid that the stomach will contain can be accurately determined by pouring in a known quantity of water and filling the stomach to its fullest extent. Thus a positive diagnosis of dilatation of the stomach may be made. A test-meal may be given, and after a certain time the stomach may be washed out and the progress of digestion conclusively ascertained. By an examination of the gastric juice by means of chemical tests the presence or absence of normal or abnormal acids, pepsin, and other ferments may be detected. The relation which the gastric juice bears to normal or pathological conditions of the stomach is too well known to require further elucidation.

The most important use of lavage is, however, from its therapeutic stand-point. This mechanical treatment has for its object the elimination of injurious or toxic agents, be they introduced as such or afterwards undergoing such changes in the system as may render them harmful. The diseased mucous membrane of the stomach is directly treated, and

the diminished or lost contractibility of the stomach is favorably influenced. Lavage may, then, be employed in cases of poisoning, either alkaloidal or mineral, in acute or chronic gastritis, and especially in cases of dilatation of the stomach. It is also of decided use in the treatment of peptic or round ulcer of the stomach, in all varieties of pyrosis, cardialgia, and malignant disease of the stomach. Its employment in carcinoma of the stomach is beneficial from the fact that such disease is mostly situated at the pyloric extremity of the stomach, and by its narrowing of this orifice gastrectasis results.

It is the object of this paper to call attention to the treatment of gastric diseases by lavage in dispensary practice. Seventy-four cases in all were treated during a period of four months, from September to January. They were cases of gastric derangement, presenting general dyspeptic symptoms, such as constipation, pyrosis, headache, etc., in which the usual remedies generally prescribed had proved ineffectual. The patients with alcoholic histories were separated from the non-alcoholic. Of the total number, forty admitted the excessive use of intoxicating liquors; two were cases of gastric cancer; three had cirrhosis of the liver, with marked gastric involvement.

In all the cases (seventy-four) so treated, failure to introduce the tube occurred in but seven, and in most of these the fear of having a foreign body thrust down their throat was the principal cause of the failure. No medicine was given, the treatment depending entirely upon lavage. In none were any bad results observed due to the use of the tube. The results may be briefly stated as follows: marked improvement resulted in fifty-two, some improvement resulted in eight, no improvement resulted in four; three cases did not return for treatment.

The most marked results occurred in the patients with alcoholic histories. The acid eructations, the flatulency, the oppression in the gastric region, and in many the obstinate constipation were relieved from the beginning. The improvement was so noticeable that the patients would come and frequently ask for a repetition of the treatment. Quite as gratifying temporary results were obtained in the cases of malignant disease of the pylorus. The history of one of the patients is quite interesting, and a brief account may be here given:

Patient—man aged fifty-seven—had for four months complained of pain in the epigastrium, which had gradually increased in severity. About the same time, vomiting, usually occur-

ring about two hours after meals, had manifested itself. The vomited matter consisted of the food that the patient had taken, in a state of more or less active fermentation. Only once had "coffee-ground" vomit appeared, and that at about the third month of the duration of the illness. The patient had lost thirty-two pounds in weight, was markedly emaciated, and somewhat cachectic. On physical examination, the heart and lungs were found normal, and on palpation of the abdomen a tumor was noticed about the size of a large lemon, occupying the position of the pylorus, exceedingly tender upon even slight pressure. The tumor was not movable upon manipulation. The patient had only within a week noticed the tumor. He was given a test-meal, and free HCl could not be demonstrated by any of the accepted tests. His urine showed nothing abnormal. His temperature, taken at different intervals on succeeding days, showed a slight subnormal tendency,—97.5° to 98° F. A diagnosis of malignant disease of the pylorus was made and lavage ordered. It was found that the stomach would retain with ease five pints of water, although this quantity of fluid produced slight pain. The patient had in all thirty-four washings. He was benefited from the first lavage, the urgent symptoms of which he complained being almost entirely removed, such as cardialgia, pyrosis, flatulency, vomiting, etc. He returned one morning, saying that he considered himself well and did not require further treatment. After an absence of six weeks from the clinic, he again presented himself, with the reappearance of his former symptoms, and urgently begged for treatment.

This case is only mentioned to show what relief, although only of a temporary character, can be obtained in malignant disease. It is easily understood how, in cases of malignant pyloric disease with stenosis, and consequent dilatation of the stomach with gastric catarrh, good results are obtained by lavage. The majority of the symptoms occasioned by malignant gastric disease are due to the dilatation of the stomach with the associated gastric catarrh, and in these conditions lavage is the remedy *per se*.

Beneficial results were also obtained in cirrhosis of the liver with secondary gastric manifestations.

When the character of the ordinary dispensary patient is considered, the lack of proper hygiene, the want of a necessary diet, their inability or unwillingness to abstain from restricted diet, their usual alcoholic tendency, the results obtained by lavage in the medical

clinic of the Jefferson Medical College Hospital are quite creditable.

Where the physician has the absolute control of his patient, as in bedside, hospital, or private practice, the result in treatment is much better. In none of the cases have harmful results followed, and where the caution is employed that has been mentioned in detail above, no evil effects will follow. In many cases in private practice the patient soon learns the manœuvre himself, and many physicians can cite examples of patients that regularly carry out this procedure without their attending medical adviser.

The therapeutic uses of the tube are many. In cases of poisoning, either alkaloidal or mineral, lavage should be used. In acute or chronic gastric catarrh with subsequent gastrectasis, it will be found by far the best remedy. In peptic ulcer, cardialgia, all forms of dyspepsia, reflex vomiting, no remedy has shown itself so generally useful. In carcinoma of the pylorus with stenosis and consequent dilatation and gastric catarrh, lavage, for a time at least, produces wonderful results. It has been advised recently as a remedy for chronic constipation due to paresis of the muscular coat of the bowel.

The contraindications are few, and it certainly is a remedy that every physician should have at his command, so that its use should give the patient the benefit which so often follows the employment of systematic lavage.

#### *THE TREATMENT OF FRACTURES OF THE SHAFT OF THE FEMUR.*

READ BEFORE THE SECTION OF SURGERY, AMERICAN MEDICAL ASSOCIATION, SAN FRANCISCO, CAL., JUNE, 1894.

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OUR chairman having paid the high compliment of assigning the subject of "The Treatment of Fractures of the Shaft of the Femur" to me, I shall, within the time allotted, place my views before the Section in the briefest possible manner.

The causes, the symptoms, and the diagnosis of fracture of the femur being entirely foreign to my subject, no mention will be made of them. We shall likewise exclude from consideration all fractures of the femur not located between the lesser trochanter and the condyles. Although every variety of fracture is found in this bone, the transverse and the oblique are the most frequent; these fractures may be either simple, comminuted, or compound.

Having made our diagnosis, we must have the patient's bed arranged so as to allow permanent and continuous traction to be employed. This traction, in the case of adults, may be effected, after the proper adjustment of the fractured ends of the bone, through the employment of the apparatus of either Liston, Desault, MacIntyre, Thomas, the Smith anterior, the Hodgen suspension, Buck, Boyer, Neill, or the double inclined plane of Esmarch, Gross, or others, the foot of the bed being raised so as to insure counter-extension. In infants either Hamilton's apparatus or vertical extension will give satisfactory results. To enter into a description of the various devices employed in the treatment of fractures of the femur would be of no interest to you, since all are familiar with them. The employment of permanent dressings—plaster of Paris, silicate of sodium, and others of a like nature—I do not think justifiable before the third week, when union is sufficiently strong to warrant their application, although many surgeons employ them from the start, and I would hesitate quite a while before I would use any of them previous to the establishment of union of the fragments. Objections will readily present themselves. Should a compound fracture present itself, I should be still slower in applying a permanent dressing.

The questions of suturing or pegging fragments in cases of compound fracture and of amputation may be settled in a few words. Where the fragments can be properly and accurately adjusted, and the blood-supply to the limb remains good, the fragments should be sutured or pegged, and the wound treated by the open method. When, however, the soft parts are lacerated and the vessels supplying the limb are divided, amputation should be resorted to early, before the patient's strength is wasted through secondary hemorrhage, gangrene, or other causes.

The treatment of fractures of the shaft of the femur resolves itself into the following: A suitable bed, accurate apposition of the fragments, the proper application of the splint and extension, good, nutritious food, and, unless the case is one requiring amputation, the results will generally be satisfactory, although shortening occurs in very many cases.

There is one question in relation to extension in fractures of the femur to which I would like to call attention; it is the matter of the priority of the application of adhesive plaster in extension. The generally-accepted opinion is that Dr. J. K. Swift is entitled to the credit of first using it, and Professor S. D. Gross, in

his "The Anatomy, Physiology, and Diseases of the Bones and Joints," page 50, published in 1830, puts forth his claim as follows: "In complicated fractures of the leg, it not infrequently happens that the soft parts about the ankle are so much contused, or otherwise injured, as to render it impossible to employ the usual extending bands. When this is found to be the case, the difficulty may usually be remedied by applying along each side of the leg, as high up as the seat of fracture will admit, a piece of strong muslin, about two feet and a half in length, two inches and a half in width, and spread at one of its extremities with adhesive plaster. The part which is applied upon the limb should be confined by three or four circular strips, so as to keep it firmly in its place and equalize the extending power. The free extremities of the extending bands should then be tied under the sole of the foot, and be secured to the block or bar which connects the lower ends of the splints. This mode of making extension, for which we are indebted to the ingenuity of my friend and preceptor, Dr. Swift, of this place, will, I am fully persuaded, be found highly useful in practice, and satisfactorily obviate the inconveniences to which I have just alluded."

Now, for more than twenty years I have endeavored to adduce evidence so as to accord the credit to Dr. Alexander McWilliams, of this city, and to that end have searched books and journals and papers. At the time when success seemed to crown this research, I find published evidence which dissipates all contention. The following appears in "Medical and Chirurgical Observations as an Appendix to a former Publication, by Benjamin Gooch, Surgeon, London," page 108, published about 1780: "To answer the same purpose, I have confined one end of a strong strip of sticking-plaster, of a suitable length and breadth, under a circular piece of the same about the middle of the sole of the foot, carrying it over the heel up the leg and confining the other end above the calf with another circular plaster, first gently and gradually bringing down the Muscul. Gastrocnem. as far as they will readily yield; giving the limb, at the same time, the position described in my Treatise on wounds. On the like occasion, I have also fixt one strap by the circular about the foot, and another by that above the calf of the leg, passing the one through a slit in the other, and using them as the uniting bandages; but then two more circulars are requisite to confine the other ends of the longitudinal straps securely." That the studies and this publication of Gooch

did not receive attention from surgeons and other writers is evident from the fact of so many others afterwards working in the same line of thought, each unconscious of the work of the other. Among these workers was Dr. Alexander McWilliams, who treated, in 1827, a case of fracture of the femur by this method of extension at the Washington Almshouse. Failing to establish the claim of Dr. McWilliams to priority in the application of the idea of extension by means of strips of adhesive plaster, I will present such evidence as I possess, all derived from letters in my possession, to establish his claim to the credit of being the first surgeon in the United States to put into practice this idea. At that time (1827), according to the letter of Dr. Hall, the recognized surgeons of this country knew nothing of this method, and, indeed, as late as 1836, M. Larrey mentions the method only to condemn it, as will be seen in the extract taken from the minutes of the Société Royale de Médecine of June 21, 1836.

In a letter, under date of January 9, 1875, Dr. Noble Young, of this city, writes, "In regard to the matter of the invention and application of adhesive strips for the purposes of extension in cases of fracture of the femur, by the late Dr. Alexander McWilliams, I have to state it is within the recollection of his family that it occurred prior to 1829; they know this by circumstances impressing it indelibly upon their memory. He sent a model explaining the application to Paris by Dr. Hall, brother of the late David A. Hall, and received a letter from the French Academy of Medicine congratulating him and thanking him for his valuable contribution. This letter has been mislaid only within the last few years. I may add that Dr. Jos. Borrows remembers its application at the almshouse in this city before 1828, when he was a student there."

Dr. James C. Hall, under date of February 15, 1878, writes, "My evidence as to the application of adhesive strips as a means of extension in the treatment of fractures by Dr. McWilliams must be circumstantial. I came to Washington in October, 1828. After graduating (1827), I was for one year a resident physician and surgeon in the Philadelphia Almshouse, now Blockley Hospital. The visiting surgeons and clinical lecturers were Professors Gibson, Horner, Rhea, Barton, and Harlan. Very many and all kinds of fractures were treated in the House, and I am positive that I never heard McWilliams's mode either mentioned or practised during my term of service. . . . My recollection is almost positive



that my first knowledge of Dr. McWilliams's use of the strips as a means of extension was derived from an article which the doctor published in a newspaper here. I thought it was the *National Intelligencer*, but Dr. Toner has searched for it and not found it there. This has not weakened my conviction that Dr. McWilliams published in some paper an account of his method of treating fractures of the femur. . . ."

Dr. Joseph Borrows, under date of June 6, 1878, writes, "Excuse my apparent neglect in not answering until now your letter in reference to the use of adhesive plaster for the purpose of applying extension in fractures of the lower extremities.

"In the year 1827 I was one of the resident students in the Washington Asylum or Almshouse, of which Dr. Alexander McWilliams was the attending physician. Dr. McWilliams at that time exhibited and used adhesive plaster for the purpose above mentioned."

In the *Archives Générales de Médecine*, Book ii. p. 247, 1836, I find (Société Royale de Médecine, Paris, séance du 21 Juin), "Rapport de M. Larray sur un appareil à extension continue pour les fractures des extrémités inférieures; par le Docteur Williams de Washington.—Cet appareil est une copie à-peu-près entière de l'appareil de Boyer. La seule différence consiste dans une attelle interne qui se fixe à la traverse sur laquelle la vis s'appuie. M. Larray blâme la méthode en général et tous les appareils qui s'y rattachent. Il n'adopte pas davantage le double plan incliné et préfère toujours son appareil inamovible. . . ."

Dr. B. Trautman, of Philadelphia, Pa., at my request, called upon Professor Gross, asking him for some definite date of Dr. Swift's application of this method of extension, and he writes, under date of June 27, 1879, "I called on Dr. Gross several times, but he always happened to be out of town; but last week I called again and saw him. He told me that Dr. Swift employed adhesive plaster in complicated fractures first in 1829."

The record of the almshouse shows, in the morning report of July 18, 1827: "Admitted P. Brady, forty years; report of July 21, 1827, fracture of femur." This is evidently one of the cases to which Dr. Joseph Borrows refers in his letter.

In no work on surgery of this date (1827 to 1836) have I found any reference to this method of extension, so it is very evident that there had been no published development of the idea until Dr. McWilliams sent his model, a doll-baby with the apparatus applied, to Paris. Dr. J. F.

May was present at the presentation and verbally testified to the favorable reception accorded it.

To my satisfaction I have established the following facts:

1. Dr. Gooch was the first to employ adhesive plaster as a means of extension in fractures.
2. The idea was allowed to pass into oblivion.
3. Dr. Alexander McWilliams, of Washington City, was entirely ignorant of the work of Dr. Gooch.
4. Dr. Alexander McWilliams developed and put in practice the idea in 1827.
5. The claim for Dr. Swift is too vague to carry weight with it.
6. The published report of the Société Royale de Médecine is the first published account of the method after its revival by Dr. McWilliams.

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#### THE TREATMENT OF PLEURITIC EFFUSIONS.

READ BEFORE A MEETING OF THE PHILADELPHIA CHAPTER OF THE ALUMNI ASSOCIATION OF THE JEFFERSON MEDICAL COLLEGE, HELD MARCH 13, 1894.

BY THOMAS G. ASHTON, M.D.,  
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IT is my purpose in this paper to mention a few especial plans of treatment of pleuritic effusions rather than to give a detailed and systematic description of the various methods of treatment of the condition.

In taking up this subject one is at the outset confronted by the fact that the tendency of the day is to assign to one particular organism a pre-eminent position in the etiology of diseases of the pleura. That most cases of pleurisy are of tubercular origin is a theory the truth of which is substantiated by new facts almost every day, but we are in danger of losing sight of the fact that agencies other than the tubercle-bacillus hold important causal relations to the disease under consideration.

This tendency to give to the tubercle-bacillus chief place in the etiology of pleurisy has naturally resulted in limiting the therapeutic management of the disease, and as we have but one cause, so we are inclined to restrict ourselves to but one treatment.

Churton (*International Clinics*, Philadelphia, 1891, vol. iii.) remarks, "There is no apparent reason why there should not be as many different causes for disorder of the cell-plates, and consequent effusion into the pleural sac, as there are

admitted to be for effusion into the sac of the hip- or the knee-joint, for example." And this writer further adds, "Who, knowing how perfectly recoverable are rheumatic affections of the joints, would propose incision, or even repeated aspirations, except for mechanical reasons?"

It is, therefore, of importance, both as regards prognosis and treatment, that we assign to other agencies than the tubercle-bacillus a position in the etiology of pleurisy. That we should have fallen into the error of giving to tuberculosis a too important standing in this condition has in large part resulted from the uncertainty of the results attending examinations of the pleuritic fluid for the bacillus. From the fact that even in cases of undoubted tubercular origin the presence of the bacillus cannot always be discovered in the effused fluid, we have come to reason, and justly so in the majority of instances, that the tubercle-bacillus acts as a factor in the production of pleurisy, even though its presence cannot be detected in the effusion. That this is invariably the case, however, and that there are not other and important causes of pleurisy, must be denied.

Of these other causes, probably the poison of rheumatism is the most important. Whatever the nature of this poison may be, we know that its effects are chiefly manifested upon the serous membranes, and it is admitted that the structures of the endocardium and of the pericardium are particularly prone to suffer. If these tissues are especially susceptible to the effects of the rheumatic poison, why should not the analogous structure of the pleura be equally exposed? Nor is it a point against this view to cite the frequency with which pleurisy occurs without coincident involvement of the joints, since it is now generally admitted that we may have endocarditis resulting from the effects of rheumatism without at the same time the joints manifesting signs of the affection.

In accordance with this line of thought, Fiedler ("Jahresber. d. Gesellsch. f. Natur u. Heilkunde zu Dresden," 1891), while holding that tuberculosis plays the principal rôle in the causation of pleuritis, calls attention to what he states to be another and not infrequent variety of pleurisy,—viz., the rheumatic form; and he holds to the view that rheumatic pleurisy is etiologically upon the same basis as rheumatic endo- and pericarditis, which so often accompany articular rheumatism; and that, due to the same cause, it can occur spontaneously without involvement of the joints.

So, also, Strümpell, in the eighth edition of

his "Lehrbuch," states that as pleuritis occurs not infrequently as secondary to acute articular rheumatism, so it would appear that in other cases the rheumatic infection tends to become localized in the pleura alone, constituting what might be called a primary "rheumatic pleurisy." This authority further states, however, that it is possible to make this explanation with full certainty in only a few cases, and that most frequently it is justified only when later poly-articular swellings, endocarditis, or other evidences of a rheumatic infection develop. In other cases of apparently primary acute pleurisy, occurring perhaps after exposure, and running a rapid and favorable course, this interpretation of the etiology is to be considered as probable. Not infrequently, however, he continues, the further course of the case clears up the pathogenesis of the disease in an entirely different way.

If, therefore, the statement be correct that rheumatism is an important and not infrequent cause of pleurisy, do we do justice to our patients if we neglect the use of the specific for diseases of rheumatic origin? If the pleurisy be of rheumatic origin, by allowing the poison to remain unopposed in the system for one moment longer than is necessary, we undoubtedly subject our patient to unnecessary risk from that most dangerous of all the complications of rheumatism,—endocarditis.

At the outset, however, we are met with the difficulty of determining which of our cases of pleurisy are rheumatic in origin and which tubercular, and this difficulty will continue until we can with more certainty determine the presence of bacilli or their products in pleuritic fluids. It is possible in these cases, however, to make a therapeutic test as to the nature of the affection, as the administration of the salicylates in cases of rheumatic pleurisy is followed by a rapid decline in the morbid process.

As to the advantage derived from the use of the salicylates in pleurisy, we possess abundant evidence from the highest authorities in the literature upon the subject. Thus, Köster (*Therapeutische Monatshefte*, Berlin, 1892, vi.) reports his experience in a series of thirty-two cases of pleural effusion. In this series aspiration, on account of threatening symptoms or non-absorption, became necessary in but three, and this notwithstanding the fact that they were all cases in which the effusion was of more than ordinary amount. While admitting that the action of the salicylates is not constant, this authority states that the drug should be tried in all cases of primary exudative pleurisy.

He also recommends its use in those cases in which a friction sound is the only evidence of the existence of pleural inflammation, claiming that it quickly lessens pain and results in a speedy decline of the temperature. Nor does he restrict the usefulness of the drug to the primary form of the disease, so called, but, on the contrary, holds that it is of value even in cases of secondary origin. This would attribute to the salicylates a value other than that which they possess as an antidote to the poison of rheumatism. A similar view is also entertained by Tetz (*Therapeutische Monatshefte*, July, 1892), who claims that secondary pleurisy is susceptible of successful treatment by the salicylates.

Jaccoud, in the last edition of his "Medical Pathology" (and *Gazette des Hôpitaux*, 1889, 1890, 1891), emphatically states that in some cases a rapid cure follows the early use of the salicylates, and that the average duration of the disease is lessened. He further claims that he has, often avoided the necessity for the operation for empyema by the use of sodium salicylate. The same authority, quoting Chassagne, says that the latter prefers to either salicylate of sodium or salicylic acid the use of salol, as being better tolerated by the stomach, and at the same time accomplishing with equal facility the resorption of the effused fluid.

Again, Lameray (*L'Union Médicale*, 1891) says that exudations of several weeks' standing will yield to the salicylate treatment, and in this connection the same writer makes the following statement, than which nothing could be more positive or of greater significance: "If this treatment be instituted early, I think Estlander's operation will be, in the future, a surgical rarity."

In the eighth edition of his "Lehrbuch," Strümpell assigns first place to sodium salicylate as a diuretic in the treatment of pleuritis, because, as he says, there has been ascribed to it a specific action in pleurisy; and, further, states that it is of especial value in cases of rheumatic origin, and that many good observers affirm that a primary pleuritic exudate under treatment with sodium salicylate often undergoes rapid resorption and the case otherwise pursues a favorable course. Strümpell also claims that, in addition to its specific action, sodium salicylate also possesses an immediate diuretic effect.

There is, therefore, much difference of opinion expressed as to the manner in which the favorable action of the salicylates is exerted upon pleuritic effusions. That the effusion undergoes resorption partly as the result of the

diuretic action of the drug can admit of no doubt; but in cases of rheumatic pleuritis it would appear not unreasonable to attribute the action of the salicylates to their well-known antidotal properties in relation to the rheumatic poison. That this limits the drug's usefulness, however, many deny; and these claim for it a value in the treatment of cases other than those of rheumatic origin, and even in those cases that are secondary to other conditions. Thus, Dock (*Therapeutic Gazette*, 1893, vol. ix. 78-82) holds the view that the drug's action is specific independently of the rheumatic origin of the disease, and in this connection considers it a significant fact that, in a case of pleuritic effusion placed upon the salicylates, he was enabled to detect the presence of salicylic acid in the effusion.

The dose of the salicylates administered in the treatment of the disease under consideration is usually a large one. Aufrecht (*Berliner Klinische Wochenschrift*, 1886, No. 10) recommends salicylic acid in gramme doses five or six times daily, the patient being kept in the recumbent posture. In two or three days the quantity is reduced to 3 or 4 grammes daily, and so continued for eight or ten days. Köster gives the salicylate of sodium in doses of 1.5 grammes three or four times daily, while others recommend the substitution of salol as being better tolerated by the stomach.

In no article, though only partially embodying the treatment of pleuritic effusion, should mention of the so-called dry method of treatment be omitted. As is well known, the efficacy of this treatment depends upon so depleting the blood-serum that, through its tendency to regain its normal consistency, it will absorb the necessary fluid from the tissues. This depletion is brought about by giving fluids sparingly by the mouth at the same time that we take from the blood its watery constituents by the systematic use of concentrated saline solutions, the latter a method of treating dropsical effusions for which we are indebted to Matthew Hay. By some this treatment is supplemented by the administration of diaphoretics and diuretics. If the blood-serum be depleted, and it possess the power of regaining its normal consistency by absorbing fluid from the tissues, from no source can it obtain such an abundant supply as from the effusion which has taken place into the pleural sac. Thus, under this treatment, very large effusions frequently undergo rapid absorption.

When, in the course of pleural effusions, evidences arise of embarrassment to respiration or to circulation, and, even in the absence of

these symptoms, when the effusion is massive, no matter what may have been the cause of the trouble, we must remove the fluid by mechanical means. When the contents of the pleural sac are serous, this is now usually accomplished by aspiration.

In causing the resorption of pleural effusions by the use of drugs, the question arises whether or not there is a possibility of doing harm to the individual by the absorption and distribution to the tissues of this fluid, which, during its retention in the pleural sac, may have undergone some change that might render it noxious. This is particularly apt to be the case in pleurisy of tuberculous origin, and the possibility of exciting an acute miliary tuberculosis should not be overlooked. Indeed, some authorities hint at the advisability in every instance of pleuritic effusion of withdrawing the fluid by mechanical means, rather than run the risk of such a possibility. Thus, Rosenbach (*Real-Encyclopädie der gesammten Heilkunde*, 1885, iii. 498) says that, in the operation of aspiration, that we withdraw from the use of the economy a certain amount of albuminous material is of no significance, because we do not know what retrogressive changes this material may have undergone, and because there remains the possibility that by the taking up again into the circulation of this substance by quick absorption a latent pulmonary tuberculous deposit may receive renewed stimulation and pursue a rapid course. Undoubtedly, from this point of view, the advisability of the mechanical withdrawal of pleural effusions of tuberculous origin deserves serious consideration.

The treatment of purulent effusion into the pleural cavity is in reality a subject for the consideration of the surgeon, and I will therefore refer to it but briefly.

Cases of empyemata occurring in the adult as a primary condition, in which the effusion takes place rapidly and the consistency of the pus is thin, sometimes result in spontaneous cure after two or more simple aspirations. This is likewise true of the empyemata of childhood, at which period of life effusions are frequently purulent from the onset. Carmichael (*Edinburgh Hospital Reports*, 1893, i. 270-275) reports a large number of pleural effusions occurring in childhood, and arrives at the following conclusions in regard to the removal of the fluid from the pleural sac in this class of patients:

1. That aspiration alone is successful in many cases of limited purulent effusion.
2. That simple drainage with antiseptic pre-

cautions is all that is required in the great majority of cases.

3. That resection of the ribs is rarely needed in children.

4. That irrigation, except in septic cases, is unnecessary, and may be hurtful if not very carefully carried out.

With the possible exception of those cases of purulent effusion occurring under the above conditions, it is but trifling with the life of our patient to trust that a purulent effusion will undergo resorption. Various methods, however, have been devised to be used in connection with partial aspiration to favor the absorption of the remaining fluid, notably that advocated by Senator, who advises that the quantity of pus withdrawn from the pleural sac be replaced by an equal quantity of some antiseptic solution, which, by thinning the consistency of the pus not withdrawn, will hasten its absorption. It is manifestly irrational, however, to suppose that a pyogenic membrane, such as the pleural membrane becomes in empyema, should be capable of taking up through its lymphatics the fluid remaining within the sac, no matter how thin in consistency that fluid may be rendered.

Thus we come to the ultimate conclusion that a purulent pleural effusion is in reality an abscess, and demands the treatment of an abscess in any other locality,—viz., evacuation and free drainage. "Ubi pus, evacua."

In closing, I would draw the following conclusions:

1. That the tubercle-bacillus is the cause of the majority of cases of pleurisy.
2. That a certain number of cases of pleurisy are due to rheumatism.
3. That in the treatment of the rheumatic cases we should employ the salicylates, as having specific action in such cases.
4. That the salicylates are of value in cases of other than rheumatic origin, and their use, therefore, should not be restricted to such cases.
5. That, as a rule, purulent effusions demand evacuation and free drainage.

#### THYROID FEEDING IN PSORIASIS.

By J. ABBOTT CANTRELL, M.D.,

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SINCE the reports of Bramwell (*British Medical Journal*, 1893, No. 11,933) and Davies (*British Journal of Dermatology*, 1893, vol. v., No. 257) upon the use of thyroid ex-

tract in the treatment of psoriasis, numerous clinicians have from time to time recorded their experiences with this drug, and while the notes have been either positive or negative, it will be found that most of the records have been negative; and while these reports, as a rule, do not state whether the cases have been under treatment or not, I find that the greater number of observers are of the opinion that the drug does not by any means justify its further continuance, especially in psoriasis.

At the recent meeting of the American Dermatological Association, held at Washington in the latter part of May, 1894, Dr. George Thomas Jackson, of New York, reported his experiences with its use in a number of diseases of the skin, and in every instance the drug proved of no value, and, furthermore, it had a deleterious effect in some of the cases.

Recently I find the records of a case being treated by this agent by W. Dale James (*British Journal of Dermatology* for June, 1894), in which he found, after a time, that glycosuria had been produced, and probably with this drug.

If this remedy, which has been supposed to have a beneficial effect in psoriasis or other diseases of the skin of a desquamative nature, be carried to other fields, it might or might not prove beneficial.

I myself have been led, even after seeing so much adverse criticism, to try the drug in cases of psoriasis that appeared in my clinic at the Philadelphia Polyclinic, and I hope that the following cases will prove interesting and instructive to my readers. The experience thus gained in my clinic gives credence somewhat to both sides of this question, and for this reason I take this opportunity to record my results.

**CASE I.—March 29, 1894.**—A young man, twenty-three years of age, being of slight build, five feet five inches in height, and weighing one hundred and twenty-five pounds. He stated that the present eruption began some three years before his visit, and that at the beginning the lesions were mostly confined to the legs and remained in that portion from eighteen months to two years. He had been treated by some obscure means without effect for over one year.

The eruption as witnessed on this date had remained in the same condition for several months. It was confined mostly to the trunk, although other lesions were scattered over the remainder of the body.

Upon the anterior surface of the trunk the lesions were situated on the right side of the chest and upon both sides of the abdomen.

Those on the right side of the chest, being distinctly above the nipple line, were four or five in number, and ranged in size from a nickel five-cent piece to a half-dollar.

Upon the left side of the abdomen I found one lesion, about four inches below the nipple and towards the ensiform cartilage, which was about the size of a silver dollar, also others near the umbilicus, which ranged in size from that of a silver quarter-dollar to a silver dollar.

Two lesions were found upon the right side of this region and directly below the nipple (seven inches below), and were the size of a silver dollar.

Upon the posterior surface of the trunk there were numerous lesions scattered at irregular intervals throughout the region, and ranging in size from a pin's head to that of a silver half-dollar.

Lesions of variable size were seen occupying portions of both the arms and legs.

The lesions were circinate, with the distinctive abrupt edge often witnessed in this affection. I found the peculiar mother-of-pearl and imbricated scale so characteristic of psoriasis.

Itching was present at irregular intervals to an intolerable degree.

At a previous visit he had been ordered 5 drops of the liquor potassii arsenitis, which was to be taken three times a day.

*April 6.*—Was ordered in addition to the above,—

R Thymol, gr. x;  
Ungt. zinci oxidi, ʒi;

which was to be applied thrice daily.

*April 17.*—The disease seems to be but slightly raised upon the surrounding skin; the lesions are, as a rule, small, although closely aggregated. The lower lateral sides of the chest and abdomen appear to be one mass of disease, and encroaching upon the anterior portion of the trunk, runs together and appears as if it was one mass. As there was not any change, I advised the use of cod-liver oil in 2-drachm doses three times a day.

*April 27.*—Eruption no better; was ordered olei copaibæ, 5 drops to be given three times a day.

*May 11.*—Condition about the same. Another change was made on this date, and he was given the desiccated thyroids of Parke, Davis & Co.'s manufacture. I advised beginning with 5-grain doses three times a day.

*May 18.*—Some slight change in the lesions; the scales are not so abundant, and the lesions begin to have the soft, natural, pliable feel of the normal skin.

*May 25.*—Thyroid was increased to 7 grains three times daily.

*June 1.*—Lesions are beginning to fade in color; the edges do not seem so marked; thyroid increased to 10 grains thrice daily.

*June 12.*—Felt perfectly well, although for some reason (unrecorded) the thyroid was decreased to the minimum dose.

*June 28.*—Eruption was almost the natural color of the skin. I advised increasing again to 7 grains thrice daily.

*July 12.*—All the lesions have entirely disappeared (two months after beginning treatment with thyroid).

**CASE II.**—*May 12.*—Male, aged twenty-eight, brass-worker, presented himself at the clinic for the first time, complaining of an eruption on the body. Upon examination, the lesions, which showed the characteristic appearances of psoriasis, were found at different portions of the whole body,—namely, the trunk, arms, and legs, a few being noticed upon the face. He was ordered the desiccated thyroids in doses of 5 grains thrice daily.

*May 19.*—A slight change was noticed.

*May 26.*—The lesions were beginning to show the effect as witnessed in the other case,—that is, the scales are beginning to fall off.

*June 9.*—The lesions very much improved in their outline; the edges are not so prominent; the scales have almost disappeared.

*June 16.*—The old lesions, which were almost devoid of scales, had faded in color considerably, but some new lesions were noticeable on the left forearm and right arm; thyroid increased to 10 grains thrice daily.

The patient did not return after this visit.

**CASE III.**—*June 16.*—Female, aged eighteen, general housework; the lesions, as a rule, were small; in places they formed patches; they were all covered with fine scales. She stated that she had never been treated, though the eruption had at times disappeared spontaneously. She was ordered thyroids in doses of 5 grains thrice daily.

*June 20.*—No change whatsoever; thyroid increased to 10 grains thrice daily.

*June 23.*—The lesions seem to show the change as witnessed in the first case. She did not return after this date.

**CASE IV.**—*May 24.*—Male, aged forty, policeman, five feet nine inches in height, and weighing two hundred and thirty pounds; he had been coming to the clinic, at irregular intervals, for a period of over one year, and during that time had been under several different remedies.

The lesions as witnessed on this date occu-

ried the forehead, especially around the borders of the hair. He had one lesion, the size of the palm of the hand, situated upon the median line of the chest; other and more numerous lesions were scattered over the back, arms, and legs; they were all decidedly itchy. He was ordered the thyroids in doses of 5 grains thrice daily.

*June 2.*—Thyroid increased to 10 grains.

*June 7.*—The man, being very much frightened, came to the clinic in a very nervous condition. He stated that he had pains all over his body, that his hands were tremulous, and that his knees felt as if he had no power to stand erect. He also stated that he had no appetite, and was almost unable to keep awake, either in the day or night, while on duty. Decreased again to 5 grains.

*June 21.*—Deeming that the remedy had been given sufficient trial in this case, I advised a change to some other.

After a careful study of the above cases and the strict discipline followed in the treatment of all, I feel that more benefit can be obtained by the feeding of psoriasis patients with the extract of thyroid than has been generally accredited to it; and while it is possible that some or many of the cases will not respond to its effect, I believe that all those having psoriasis, if they can take the proper dose to affect the disease, will undoubtedly be benefited by it.

Thus, it will be seen that one of my cases (Case I.), a slimly-built, delicately-formed, nervous young man, took and could take a larger dose than a large robust man (Case IV.); and while the dosage used in the first case gave the desired cure, the second case was not at all benefited by it, and, in fact, new lesions formed while he was taking it, and at the same time disagreeable effects were noticed, thus showing that the latter case did not get the proper dose to affect the disease.

We cannot expect that a remedy which has been extolled in this or that affection will give the desired result in all cases using it.

#### STERILIZATION OF CATGUT.

RÉPIN (*Revue de Thérapeutique Médico-Chirurgicale*, June 15, 1894) has found a method of sterilizing catgut by means of heat. He uses the vapor of alcohol heated to 120° C., verifying the sterilization by placing bouillon in the same tubes with the gut; if the bouillon remains clear, the gut is fit for use; but if it becomes turbid, the ligatures should be rejected, as the tubes are infected.

# The Therapeutic Gazette

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## Leading Articles.

### THE CUMULATIVE ACTION OF DIGITALIS.

A SUBJECT which possesses a great amount of interest to the practitioner of medicine is the question as to whether the most important of the group of cardiac stimulants, digitalis, possesses in any sense what is known as a cumulative action. It is a question which has been discussed *pro* and *con* in the columns of the THERAPEUTIC GAZETTE as long ago as 1888, and in other journals and text-books, until one would have supposed that by this time distinct and definite ideas as to whether this result ever occurs would have been reached. Our attention has been called to this subject once more by the article of Dr. Beaumont Small in "Buck's Reference Handbook of the Medical Sciences" (the supplementary volume), in his article upon "Digitalis." The statements which he makes are the more worthy of notice,

in view of the fact that his contributions to this volume are certainly among the most valuable which the work contains. Not only does he bring to his contributions a wide knowledge of the literature, but he appears to have been very careful to occupy a judicial position in all his utterances in this important volume of medical learning. It is because we are forced to differ with Dr. Small that we write this editorial, being well aware of the large number of statements which he can bring forward, made by competent authorities, that the cumulative action of this drug is never seen. We take our position in this positive manner not only because we believe that such an effect may be produced theoretically, but because we have actually seen it occur in a sufficient number of cases to make us very certain of the correctness of our observation. It goes without saying that much depends upon what we mean by the term "cumulative action." We may indicate that the organ resists the action of a drug or remains free from it for a considerable period of time, and then suddenly gives way to its peculiar influence; or, on the other hand, that a large quantity of the drug is retained in the body, either in the tissues or in the organs which receive it, without entering the active circulation, and that it is only when the tissues become so loaded with the drug that they are practically saturated with it that it is poured into the circulation and immediately exercises an almost toxic influence upon the organs which are susceptible to its power. Again, cumulative action may to a certain extent depend upon frequent dosage of a drug which is very slowly eliminated, and so accumulates in the system. It is worthy of notice in passing that digitalis is probably such a drug, although the important point should not be forgotten that it is so completely destroyed in the organism by oxidation or otherwise that chemists have never been able to satisfactorily obtain either it or any derivative of it from the urine or other secretions of the body. In Dr. Small's article, which we have quoted, he states, "A cumulative action in the sense of an accumulation of the drug in the system followed by an outburst of increased action is no longer feared; no such condition occurs. Toxic symptoms arise only from an overdose or from its prolonged administration, and the condition of poisoning is preceded by its regular train of symptoms." These sentences are difficult of analysis, for he states that toxic symptoms only arise from its prolonged administration. Of course toxic symptoms arise from the prolonged administration of all drugs if the dose is a large one, as chronic poi-

sowing is finally induced. We think that this is one of the points in which a mistake is made. The question is not as to whether digitalis produces toxic symptoms after prolonged administration; it is whether the drug is capable of being administered for twenty-four or forty-eight hours without effect and then able suddenly to develop its full influence. We believe very distinctly that, under certain conditions, this is an action of digitalis, as we have already said. In the first place, aside from the slowness of its elimination, we all know that the drug has an action upon the heart which lasts for a very long period of time. Thus, we have under our care at the present moment a case of rheumatism to which a physician, who had the case before we were called in, was administering full doses of digitalis. It is now a week since this medicine was stopped, yet, notwithstanding this, the effects of the digitalis upon the heart (which are so characteristic) progressively became more and more marked for three days after the administration of the drug was discontinued, and on this—the seventh—day the pulse-rate is only 60, and the heart's action is irregular and still possesses the peculiarities of digitalis. It is impossible to believe that any physician would have administered the drug and ordered its continuance in the face of such symptoms of cardiac distress as the digitalis produced in this instance. In other words, in this, as in many other cases where the patient has been under observation during the entire administration of the drug, perfectly good evidence is obtainable to show that the full effects of the drug were suddenly developed, and that even after it was stopped its effects increased for a considerable period of time. There are two conditions in which, without any doubt, this drug is exceedingly apt to exert this cumulative action. One is seen in cases of ascites, even in those instances where the drug has been given in comparatively moderate dose, as, for example, 5 drops of the tincture three times a day, the other in cases of high fever. In the first of these cases there can be no doubt that removing the fluid from the abdominal cavity is followed by a heightened action of digitalis, when that drug has been administered for a considerable period of time prior to the paracentesis, and indeed this is also true of those cases of general anasarca where the dropsy is relieved by purgation. Those who have given digitalis to any extent in cases of fever must have seen the fact illustrated, which was first pointed out experimentally by Lauder Brunton, that digitalis fails to exert any influence, or at least its ordinary influence, upon the heart if the body tempera-

ture is above 103° F. If they have watched their cases carefully, and have continued the administration of digitalis, they will have noticed when the fever declines, either in the natural course of the disease or because of constant cold spongings, that the digitalis at once exercises its well-known influence, and speedily produces far greater effects than the moderate doses which have been given during the few hours preceding the fall could possibly have produced had their effects been distributed over hours. This is certainly an instance of the cumulative action of digitalis. We believe, on the other hand, that the development of this cumulative influence is not commonly met with in the average case of heart-disease to which the drug is administered, and the symptoms are not to be confused with the characteristic abortive beatings of the heart under the action of excessive doses of this drug; for sometimes the heart is found beating furiously, yet producing almost no radial pulse; at other times it beats with remarkable slowness—45 to 50 per minute—and then quite rapidly, or the beat is intermittent both in strength and in frequency. In still other cases when the doses of the drug have been excessive, either because of their size or cumulative action, a condition of what might be called asystole is produced, in which auscultation of the præcordium can scarcely reveal the first sound of the heart.

So far as we know, all preparations of digitalis are equally liable to produce the condition of which we write. Personally we have always found that the tincture of digitalis fulfilled all the indications, both from a pharmaceutical and therapeutic stand-point, and so prefer it to any other form of the drug.

#### THE TREATMENT OF CANCER.

COLEY, in his collection of cases of malignant growth cured by an attack of erysipelas, and Spronck, in his paper detailing the results of inoculation of the sterilized toxine of erysipelas in nineteen inoperable cases of cancer, have called the attention of the profession to a method of treatment in the line of the therapeutics of the future, and one which, though uncertain in its results and dangerous in its application, holds out a possibility of cure when the operation stage has been passed and the outlook is otherwise absolutely hopeless. The real percentage of cure is, of course, indicated not at all by collections of reported cases, since, until very recent times at least, continued or even more rapid growth of a



neoplasm after a florid erysipelas would have been considered as the natural course of events and hence not deserving of publication. Certainly every surgeon of more than fifteen years' standing will recall not one, but perhaps many, cases of cancer operation in which the growth was apparently quite removed, in which the wound and surrounding parts were attacked by erysipelas or cellulitis, and in which there was recurrence *in loco*. It is difficult to imagine an inoculation made under circumstances better calculated to demonstrate the curative power of erysipelas, and yet such accidental inoculations usually failed. Coley has shown, however, that in a small number of carefully observed, perfectly authentic cases, erysipelas inoculation has succeeded. His statement on this point is not open to doubt, and the only caution to be observed is lest the surgeon who studies collections of cases should be led into the error of hoping too much and, far worse, of promising too much.

Agnew, whose experience in the treatment of malignant growths was enormous, always held that free suppuration following cancer operations lessened the probability of recurrence, though he was one of the first in this country to accept and to teach the principle and practice of clean surgery. Wyeth states definitely that infection by pus microbes will cure sarcoma, and quotes a case in point. From his patient he removed a portion of a large sarcoma, and into the remainder injected arsenous acid. This was followed by violent inflammatory reaction and free suppuration. The patient was cured, and has remained well for ten years. Wyeth attributes the cure not in the least to the caustic action of the arsenic, since only a very small portion of the remaining growth was reached, but rather to the streptococci infection. It seems clear that reported cures of cancers by the various injections, such as pyoktanin, for instance, can be explained on the same ground; though, for the most part, these cases have been so carelessly observed, or at least so imperfectly reported, that they cannot be accepted as instances of veritable cancer cure.

A second case of sarcoma observed by Wyeth was subject to amputation of the leg, and later of the hip; a second recurrence in the hip incision was cured by an accidental attack of erysipelas, and the patient is still living five years later. In a third case an accidental erysipelas resulted fatally; in a fourth an intentional erysipelas was followed by no improvement in a sarcoma of the jaw.

Wyeth agrees with Coley that sarcoma may

be cured by sepsis, particularly by that of erysipelas, though the products of the ordinary pus microbes are also potent. He believes that the sterile products of erysipelas streptococcus are also efficacious. Inoculation into the neoplasm gives best results, though the action is ordinarily through the blood. Adenoid carcinomata react scarcely at all; epitheliomata are sometimes favorably affected.

The discussion on malignant growths, held in the Section on Surgery and Anatomy of the American Medical Association (*Journal of the American Medical Association*, June 30, 1894), was noteworthy from the fact that the modern treatments of cancer—*i.e.*, cauterization, excision, and inoculation—were fully and ably set forth, with their respective claims to recognition and adoption.

As to cauterization, though its mode of application, its action penetrating beyond the tissue immediately destroyed and destroying the cancer cells of lower vitality, while leaving uninjured the normal tissues, and admirable results following its use, were clearly demonstrated, the general consensus of opinion was decidedly against it as a routine treatment, and with this verdict the great majority of surgeons are fully in accord.

Excision, particularly early excision, in the precancerous stage, if possible, was the method of choice, and it was indicated that when the value of this operation shall be more fully recognized, the ultimate mortality of cancer will be far less appalling than at present.

As for inoculation, this shows thus far merely possibilities. The method, however, seems to teach one lesson,—*i.e.*, that suppuration in and about the site of malignant growth exerts a distinct antagonistic effect on the extension of such growth; hence it would seem perfectly logical in such operations to encourage suppuration.

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## Reports on Therapeutic Progress.

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### TRANSFUSION.

VON ZIEMSEN (*Munch. Med. Woch.*, May 1, 1894) uses the following method of transfusion. Under very strict antiseptic precautions, he withdraws, by means of a syringe holding twenty-five cubic centimetres, blood from the median vein of the giver and injects it directly into the corresponding vein of the receiver. Three assistants are required. Three glass syringes with canulæ and a large vessel containing sterilized salt solution and standing

in a water-bath are also needed. The salt solution serves the purpose of washing out the syringe before it is used anew. In this way 200 to 300 cubic centimetres of blood may be injected without fever or local reaction. Unpleasant results never occurred. The destruction of the red cells cannot be considerable, as hæmoglobinuria was never present, nor yet free hæmoglobin in the blood. According to the author's experience, the good effects of injecting blood in acute anæmia is beyond doubt. In severe progressive anæmia it is more questionable. He reports such a case in a woman, aged thirty-eight, to whom seven injections, amounting in all to 900 cubic centimetres of blood, were given with considerable benefit. Subcutaneous infusion is inferior to transfusion, but is recommended if proper assistance cannot be obtained. There may, however, be pain at the site of the infusion, and a moderate degree of fever may also occur.—*British Medical Journal*, June 16, 1894.

### THREE CASES OF ANEURISM TREATED BY VENESECTION.

DAVISON writes upon this subject in a useful paper, which he concludes as follows:

Bleeding in the treatment of aneurism is no innovation. It was, even according to Dr. Balfour, suggested by Hippocrates, and it formed the basis of the celebrated treatment of Valsalva,—a treatment which fell into discredit owing to the abuse of bleeding which it advised, and because, at the same time that it tended to consolidate the aneurism, it also tended to prevent this consolidation. Medical literature presents cases where spontaneous rupture of aneurisms has been followed by contraction of the sac, relief of symptoms of compression, healing of ruptured wound, and apparent prolongation of life. If such benefit can follow the spontaneous rupture of an aneurism, may not the same benefit be obtained by the harmless extraction of blood from a vein? The abuse of a remedy is not a sufficient cause for excluding its legitimate use, nor must the intelligent physician be bound by the fashion of the day, which at one time decrees abuse of bleeding and at another time its total rejection.

The dilatation of an aneurism is produced by the pressure of the blood stretching its coats, weakened by disease. If these coats retain contractile elements, it is evident that a diminution of the volume of blood within the aneurism, together with a diminution of the pressure of the blood, if carried to a sufficient

extent, will enable the aneurism to contract; but the lowering of blood-pressure after hemorrhage is only temporary, and after a short time this pressure regains its former force. Does it, then, follow that conjointly with the return of the force of the blood-pressure the aneurism will again dilate to its former extent, and thus bleeding come to be of no value? Certainly not, for in order that the aneurism may return to its former degree of dilatation it is necessary either that in a few days changes shall take place within its walls, lessening their power of resistance, or that the blood-pressure shall attain to a degree which it had not reached before; for if, before, a certain amount of blood-pressure was necessary to keep the aneurism in its over-distended state, now that it has contracted, to keep it again stretched as before would require the same amount of blood-pressure that maintained it distended, plus another quantity necessary to overcome the contractility of the walls now contracted, and therefore in more favorable conditions to overcome resistance. It follows, therefore, that when the walls of an aneurism retain a sufficient quantity of contractile elements, the contraction which will take place on lessening the volume and the pressure of the blood after a good bleeding may, with judicious care, be maintained even after the blood-pressure has regained its former strength. In the treatment of aneurisms three principles must be kept in view,—the contraction of the aneurism, the hypertrophy of its walls, and, lastly, the deposition of fibrin within its cavity. The first indication can be carried out by a copious depletion, together with absolute rest for several months and the ingestion of but a limited amount of liquids. The second indication can be carried out by the internal administration of iodide of potassium, as recommended by Dr. Balfour, avoiding excessive doses, which may accelerate the pulse. The third indication requires, in addition to the above measures, a diet which, without being very rich to stimulate unduly the circulation, will at the same time be nutritive enough to produce a sufficient quantity of fibrin. The principle advocated in the treatment of aneurisms is not the impoverishment of the blood, but the temporary diminution of its volume and of its pressure, so as to enable the aneurism to contract and place it thus under circumstances more favorable for the operation of other remedial agents which tend towards its consolidation. Repeated bleedings at short intervals have been known to be positively harmful; but keeping in mind the above principle, the intelligence

of the physician will indicate when and how to bleed. Judicious bleeding in the treatment of aneurisms will prove to be a valuable element, by means of which alarming symptoms of compression may be quickly removed, instant death sometimes averted, and the patient placed under favorable conditions for the prolongation of his life.—*Lancet*, May 19, 1894.

#### *TETANUS TREATED WITH ANTITOXIC SERUM.*

GIUSTI and BONAIUTI (*Gazz. degli Ospitali*, May 12, 1894) describe a case of tetanus treated with antitoxic serum. The case is remarkable on account of its clinical course, its successful issue, and the amount and power of antitoxin used. The patient, a robust man, received severe lacerated wounds on the face—one of these being deep and dividing the zygomatic process—in a railway accident. All the wounds were freely contaminated by earth, and the patient's leg was also the seat of a simple fracture. Notwithstanding prompt and careful cleansing with antiseptics, etc., some trismus and exalted sensibility made their appearance on the day after the occurrence, leading the observer to suspect the onset of tetanus. Nevertheless, the trouble disappeared, and the patient did well until January 7,—twenty-one days after the accident. Undoubted tetanus then made its appearance, characterized by great respiratory and cardiac difficulties and obstinate vomiting, in addition to the more usual symptoms of a severe case. After three days of unavailing application of the ordinary treatment,—chloral, calomel, vapor-baths, etc.,—a consultation was held with Tizzoni, who at once instituted the treatment with antitoxic serum from a highly-immunized horse (antitoxic equivalent 1 to 10,000,000). On February 1 two injections of this serum (40 and 20 cubic centimetres) were given. After these the patient experienced a period of calm and got a little sleep. Next day, the temperature being high and tetanic symptoms still prominent, two injections (20 and 10 cubic centimetres) of serum from an immunized dog were given (relative power 1 to 10,000,000). The tetanic symptoms then disappeared for a time, to reappear, however, in a very mild form during the night. On February 3 an injection of dog's serum (10 cubic centimetres) was given in the morning, and in the evening 50 centigrammes of alcohol precipitate of the horse serum, dissolved in water. On February 4 to 8 further injections of dried precipitate or of dog's serum were made, although the non-appearance of further

tetanic symptoms probably rendered some of these superfluous. From this time the patient's condition improved steadily. He was at last discharged cured. The total amounts of protective material used were: horse serum, 60 cubic centimetres; dog serum, 110 cubic centimetres; dried alcoholic precipitate of immunized horse serum, 2 grammes, equivalent to about 20 cubic centimetres of serum. Attention is drawn, first, to the early symptoms, appearing on the day after the accident, and due probably to absorption of a dose of ready-formed toxin from the contaminating earth; secondly, to the occurrence of a severe attack of "cephalic" tetanus after the long incubation period of twenty days; thirdly, to the complete failure of ordinary measures and the rapid success of the specific treatment; lastly, it was suggested that the dog's serum had probably a more potent effect than the other variety in reducing temperature. The dried precipitate of serum was somewhat difficult to use, on account of its imperfect solubility and the risk of contamination during the process of dissolving it.—*British Medical Journal*, June 16, 1894.

#### *THE ACTION OF ASPARAGUS ON THE KIDNEY.*

Three years ago WILKS sent a short communication to the *Lancet*, requesting the opinion of the profession on this subject. He therein stated that, in spite of books declaring asparagus to be a diuretic, he had observed that the very contrary was its action. Four letters came in reply, written by medical men. Three of them stated that from direct observation they had ascertained the inhibitory action of asparagus on the function of the kidneys, so that frequently only a third of the normal quantity of urine was secreted after eating this vegetable. The fourth gentleman said he had no knowledge of his own, but believed asparagus to be a diuretic, as he had always understood it to be so. The question of this vegetable's action in the economy is of little importance when it is so universally eaten and approved of, but it is one of interest in connection with the history of medicine as a science and art. In other sciences knowledge has grown from small beginnings, so that they have a solid foundation and superstructure; but the practice of medicine has existed from the remotest ages and was born of superstition. Consequently, a large part of our advance has been by getting rid of and overthrowing error. The writer has on his shelves a "Herbal," published about a hundred years ago, describing the

value of a vast number of plants which are now discarded as useless; but that a positive error, and one the very reverse of the truth, as regards the action of a well-known vegetable should still be propagated in books is a most remarkable fact and, as regards the whole subject of therapeutics, a very sad one.—*Lancet*, April 28, 1894.

#### PIPERAZIN.

*Apropos* of Dr. Stewart's interesting paper recently published in the THERAPEUTIC GAZETTE, the following summary of a paper by GORDON SHARP is of value:

1. Piperazin is not wholly oxidized in the body, and may be detected in the urine of those to whom it is exhibited.

2. Piperazin in solutions of one per cent. in normal urine, when kept in contact at a temperature of 39° C. (body temperature) for a given time, has the property of dissolving to a great extent a fragment of a uric-acid calculus.

3. That the stronger the solution of piperazin in urine (up to 7.5—) the earlier did the solvent action begin and the more rapid was the completion.

4. That, notwithstanding this, with the stronger solutions of piperazin in urine the rate of solubility was not so markedly rapid over the weaker solutions as might be expected.

5. That the solvent action of piperazin in similar circumstances was greater than any other of the substances that were employed,—namely, borax, lithium citrate, sodium carbonate, and potassium citrate.

6. That piperazin, in weak and strong solutions in urine, converted the undissolved portion of the calculus into a soft granular or pulpy condition.

7. That neither borax, lithium citrate, sodium carbonate, nor potassium citrate in similar circumstances rendered the fragment of calculus soft or pulpy.—*British Medical Journal*, June 16, 1894.

#### TREATMENT OF SEA-SICKNESS BY CHLOROBROM.

In the THERAPEUTIC GAZETTE for September 15, 1892, p. 617, we published an abstract of an article on the use of chlorobrom in seasickness by CHARTERIS, who now makes a further report:

1. In long sea-voyages no prophylactic benefit can be secured by the use of chlorobrom unless for two nights before embarkation the pas-

senger pays due attention to the stomach and bowels by taking a cholagogue pill. Further, in the case of a person who dreads a voyage, a dose of the solution should be taken.

2. The diet on board ship should be "spare and dry." Soups, pastry, and sweets should be especially avoided, and no full meal should be indulged in. A hypnotic dose ( $1\frac{1}{2}$  tablespoonfuls for a male and 1 tablespoonful for a female) should be taken for three nights.

3. In short voyages, when the steamer leaves, perhaps, at 10 P.M., the passenger should immediately retire to rest and take one of the doses mentioned.

4. In a shorter passage across the Channel a teaspoonful should be taken before going on board.

5. By following these directions immunity from sea-sickness is obtained in the great majority of cases, but if they be not followed it is to be remembered that chlorobrom has no effect in arresting an outburst of vomiting. If it is given in a teaspoonful dose every ten minutes until a tablespoonful and a half or a tablespoonful have been taken, it will almost invariably check retching and depression.—*Lancet*, April 21, 1894.

#### INFECTION BY THE TRICHINA SPIRALIS.

ASKANAZY (*Centralbl. f. Bakt.*, Bd. xv., No. 7) observes that two questions await solution in regard to the process of infection by the *Trichina spiralis*: (1) how do the embryos which, according to the general view, are deposited only in the lumen of the bowel, pass through its wall? (2) how do they reach the striated muscles? In the belief that an examination of the bowel-wall in cases of trichinosis would assist in the decision of both questions, Askanazy infected rabbits with the parasite; in seven to ten days the intestines were removed and placed for fixation in Flemming's fluid. Pieces were embedded in celloidin, cut, and stained with safranin. The following facts were established:

1. The female parasite penetrates into the villi and mucous membrane generally, not deeper, however, than the muscularis mucosæ, and lies in that membrane or in a chyle vessel.

2. None of the specimens showed embryos lying free in the tissues of the intestinal wall or in its blood-vessels.

3. Embryos were found in the lumen of the chyle vessel of a villus.

In one case a parasite filled with embryos projected into the chyle vessel, which also con-

tained them, thus rendering it very probable that they had been deposited in the vessel. The investigation would appear to show that the young trichinæ are deposited in the lymphatics and are carried away by the lymph-stream. The discovery of embryos in the mesenteric glands (Virchow, Gerlach) is in accord with this opinion. The following considerations are against the old view that the embryos are deposited in the lumen of the bowel and subsequently bore their way through its wall:

1. The uncertainty with which the embryos are found in the bowel lumen, as shown by a review of the literature on trichinosis.

2. The author's examination of a great number of fresh specimens of intestinal mucus failed to show a single free embryo, even when the female trichinæ were filled with young.

3. Embryos were found only twice in the bowel lumen in a large number of sections, while the adult parasites were plentiful there.

4. As the parasite deposits a large number of eggs, embryos should be numerous in the bowel contents if the deposit took place in the lumen. Against the boring theory is the fact that nobody has yet seen an embryo lying free in the bowel wall. The rare occurrence of young parasites in the lymphatics in these sections is explained by the author on the theory that they had been rapidly carried away by the lymph-stream.—*British Medical Journal*, June 16, 1894.

#### BICHROMATE OF POTASSIUM AS A REMEDY IN GASTRIC AFFECTIONS.

Notwithstanding the assertion made in 1883, and supported by much illustrative evidence by so high an authority as Vulpian, of the value of bichromate of potassium in the treatment of several forms of gastric affection, this substance has not yet gained a position among the many substances that are used in the treatment of these affections, and but meagre reference is made to it in only a few works on medicine and materia medica. Previously to Vulpian's recommendation it had been used by internal administration as an emetic, and with varying success in syphilitic, broncho-pulmonary, and nervous disorders; and Drysdale had advocated its employment in affections of nearly all the important organs of the body. Having in 1884 treated with gratifying success a case of persistent gastric disorders by the administration of small doses of bichromate of potassium, he has since that time administered it in a large number of cases. The results have been so favorable that he feels justified in stating his

opinion of the therapeutic value of this substance and in briefly recording a number of the cases of gastric disorder in which it was used by him. With a few exceptions, the cases have been those of hospital patients. While such patients give the best opportunity for determining the effect of medicinal substances, it is not to be overlooked that, in some respects, they are also placed in more favorable conditions for successful treatment than the majority of private patients. In order to simplify the therapeutic problem, the medicinal treatment was as far as possible limited to the administration of bichromate of potassium. This limitation, however, could not be adhered to in all cases; but only those cases will be described in which the drug alone was administered, or with the addition of other remedies, such as purgatives, rendered necessary by the circumstances of the patient, and unlikely to obscure the effects of the chief remedy. He records the cases in two groups, the first comprehending eighteen cases of various forms of dyspepsia unassociated with evidence of gastric ulcer, the second ten cases in which distinctive symptoms of ulcer had been present at some previous time.—*Lancet*, April 14, 1894.

#### TREATMENT OF PERIPHERAL NEURITIS.

LEYDEN (*Berl. Klin. Woch.*, No. 20, 1894) discusses the treatment of multiple neuritis. He considers that in the case of neuritis following acute specific diseases, care during convalescence, as to nourishment, rest in bed, and avoidance of over-exertion, contributes to prevent its occurrence. "Etiological treatment" (removal of the cause) and treatment of the primary malady as in diabetes are of the first importance. There is no specific remedy for multiple neuritis, and treatment by drugs does not play a very important part. Owing to the fact that rheumatism is not infrequently an element in the etiology, salicylate of sodium and other antirheumatic drugs had been used without producing any good results in the majority of cases. Antipyrin, phenacetin, exalgin, euphorbia, and methylene-blue were sometimes of use for the relief of pain, but it was often necessary to resort to morphine, chloral, sulphonal, etc. Strychnine, formerly much used, but lately fallen into the background, deserved to be tried; by increasing the excitability of the affected muscles, it favored the return to normal function and nutrition; it ought especially to be resorted to in progressive cases in which the respiratory movements were threatened. Leyden prefers to use it as a subcutane-

ous injection ( $\frac{1}{8}$  grain to  $\frac{1}{4}$  grain twice daily). Massage and baths were valuable auxiliaries, which were indicated, especially the latter, in the later stages of the disease. General hygienic treatment was of much importance. Rest—as a rule, rest in bed—was of the first importance in the early stage; in the later stage, feeding. Finally, in the latest stages of all, moral suasion, rousing the patient's latent energies, was often of great value. Passive movements, and encouraging the patient to make active movements, were generally attended with better results than massage in this stage. Electricity, formerly used too much, was now used too little, but its usefulness was greatly limited by the fact that in many cases the pain caused was too great to permit the treatment to be continued.

*A LARGE QUANTITY OF MORPHINE  
TAKEN HYPODERMICALLY WITH  
SUICIDAL INTENT; RECOVERY.*

The following case of attempted suicide is recorded, not from any novelty in the way of treatment, but on account of the enormous dose (estimated at 12 grains) that was taken and from which recovery ultimately resulted. The writer was sent for one evening about 11 P.M. to see a servant-girl who had "poisoned herself with opium." On seeing her a very few minutes after she had taken the opium, the reporter found her already stuporous, drowsy, and with her pupils much contracted. She had taken some morphine hypodermically, the bottle and syringe being by the bedside. Subsequently, inquiry elicited the facts that she had been accustomed to go to the druggist with her master's prescription, who was taking morphine hypodermically under medical advice, and that her knowledge of his taking it in this manner suggested a ready means of self-destruction. The druggist, believing that she had come for the drug on her master's order, had no hesitation in supplying her. She obtained the hypodermic syringe by the same means. On examining the girl's arm, seven recent acupunctures were readily discernible, and she subsequently stated that she had taken six syringefuls of the solution. The syringe was a 20-minim one, and at least three drachms of the solution were missing from the bottle. There was no sign on the night-dress or bed-clothes of any of the solution having been spilt, and only one of the acupunctures was bleeding; it is probable, therefore, that two drachms of morphine were taken. Unfortunately, this can, of course, be only a matter of

surmise. The usual means were employed to keep the patient alive,—viz., atropine (four grains in  $\frac{1}{8}$ -grain doses were given during twelve hours at short intervals, without any result on the pupils), galvanism, wet towels, cold coffee, exercise, artificial respiration, etc. The respiratory centre was affected in far greater degree than the cardiac. Twice during the twelve hours following the administration of the morphine artificial respiration was called for, once for twenty minutes and again for five. Lividity and blueness of the face were constant and pronounced. The iris was contracted to such an extent that the pupil appeared to be quite absent, not even the space of a pin's point being discernible in the muscle, and the eye appeared as covered entirely by the iris. The conjunctival reflex was absent for some hours, and the eye appeared glassy and dull. After twelve hours' treatment symptoms of improvement showed themselves, but for no less than thirty-six hours after taking the poison had the treatment to be persevered in at intervals. If the patient was allowed to sleep, even after twenty-four hours, the respiration ceased after two or three minutes, and lividity and blueness of the face rapidly supervened. She required constant rousing, and even exercise from time to time. The girl was nineteen, and had never to her knowledge taken morphine previously in any form. The solution was of British Pharmacopœia strength.—*Lancet*, March 17, 1894.

*FERRATIN.*

Ferratin is prepared by exposing a mixture of certain proportions of white of egg and an iron salt to the action of slight heat in an alkaline medium. It is a red-brown powder, little soluble in distilled water, but soluble in presence of soda. MARFORI (*Ann. di Chimica e di Farmacologia*, February 1, 1894) has investigated this substance, and his conclusions are as follows: It contains from seven to eight per cent. of iron. It is absorbed in notable quantities from the intestines, and when injected directly into the blood-stream it does not appear to be excreted either by the kidneys or the intestines, save in minute quantities. This is a great contrast to what happens with the inorganic salts of iron, which are mainly excreted into the intestines. It is a remarkable fact that the liver of many animals examined is found to contain naturally a substance closely resembling the artificial ferratin, and in considerable abundance. It appears to be also identical with the "hæmatogen" isolated by Bunge from the egg. Bunge proved that this substance serves as material for

the formation of hæmoglobin, so that ferratin should be a really valuable blood food. Clinical experience has proved it to act in this way, and without causing any constitutional disturbance. It may be given in doses of 15 to 30 grains daily, care being taken not to associate it too closely with acid materials.—*British Medical Journal*, June 16, 1894.

#### THE ANTITOXIC FUNCTION OF THE LIVER.

Padua, through Professor Lussana, Brussels, through Professor Heger, and Geneva, through Professor Schiff, have of late years been associated with special investigations into the physiology and pathology of the liver, and now Rome has fallen into line with these sister schools by a series of interesting researches into the same viscus. It has been already established by the above-named biologists that the liver possesses a power of retaining certain poisonous alkaloids in high proportion and in their most active state,—that is, when injected into the circulation and not merely absorbed by the mouth. Explanations have been hazarded as to this protective power of the liver against these toxic agents, and quite recently Dr. Schupfer, working under Professor Colasanti, Lecturer on Physiological and Clinical Chemistry in the University of Rome, has contributed elaborately to the solution of the question. His experiments were made on frogs,—animals which tolerate removal of the liver well, and keep alive for days after the operation, nay, in some cases, for weeks. The alkaloids were injected into frogs in their normal condition and into those which had been operated on, and every care was practised to watch the phenomena resulting. The alkaloids used were cocaine, atropine, apomorphine, and pilocarpine. Dr. Schupfer embodies his conclusions in a memoir read before the Accademia Medica di Roma, and they are to the following effect: the liver, by its sole intrinsic action due to the specific activity of its cellules, can diminish the toxic power of the alkaloids with which it is brought into contact. Such action is manifested not only in the case of poisons introduced through various channels into the organism, but also in the case of poisons elaborated internally within the organism itself in consequence of putrefactions or of products due to the activity of the tissues. From this he deduces a practical lesson,—that, namely, of having recourse to internal disinfections and to a special alimentation, so as to obviate or to minimize “autotoxication” in all those

maladies in which the liver does not perform its functions normally.—*Lancet*, March 17, 1894.

#### TREATMENT OF APOPLEXY.

PRESTON, of Baltimore, believes that in the treatment of apoplexy more might be done in the prodromal stage if this condition were more carefully studied and oftener recognized. There are no constant or certain prodromata, but in a considerable proportion of the cases here related the history obtained afterwards from the patients showed the existence of headache, vertigo, or a sense of fulness in the head, numbness of one side, etc. These symptoms in some instances existed for a week before the apoplectic attack. It is very important to heed these warnings, especially in cases where there is atheroma of the vessels, or where there is high arterial tension without atheroma. Rest, vascular sedatives, nitroglycerin, large enemata, will often modify the force of the circulation and thus tend to avert the rupture of the artery. Some years ago the writer called to see an elderly woman, stout, with flushed face, headache, and unusually high arterial tension. While waiting for the family physician, she was kept absolutely quiet, with ice to her head. While consulting in the next room, the patient, against orders, got up to use the commode; the arteries could stand no further strain, rupture occurred, and she died in half an hour, with all the symptoms of intracranial hemorrhage. Venesection would probably have averted this disaster. It rarely happens that the physician sees clearly enough to make use of bloodletting. After the rupture of the artery has taken place, it is doubtful whether venesection does any good. The most important part of the treatment of apoplexy is rest. There is no way by which the bleeding can be stopped, and it is probable that in the great majority of cases the increased intracranial pressure tends to control the hemorrhage. The ruptured artery or miliary aneurism is small, as a rule, and it is generally soon occluded by clot. If the amount of hemorrhage is moderate and not in a vital part of the brain, recovery, more or less complete, will take place if the clot remain in its first position.

Very often it happens that the original location of the clot was not specially dangerous, but from gravity, or as the result of exertion, the clot has forced its way through the soft brain-tissue and done irreparable injury to more important structures. This can often be seen post mortem and the track of the clot made out. From this it follows that the great-

est care should be exercised to prevent any more moving of the patient than is absolutely necessary. If it be possible, the patient should be laid down on a sofa or mattress in the room where the attack occurs and no attempt at movement made for twelve or twenty-four hours. It is better to slightly elevate the head by pillows, since this probably tends to modify the force of the heart's action in the cerebral vessels, and at the same time allows respiration to be carried on rather better than when the patient is perfectly flat. Opening the skull has been resorted to, but it is doubtful whether this is advisable, except in the case of meningeal or cortical hemorrhage. The ice-cap to the head is of some use in allaying restlessness, and is extremely good treatment for the relatives and friends. In regard to drugs in this early stage there are practically no therapeutic indications that can be successfully met. The use of ergot and that class of remedies is of more than doubtful propriety. Aconite may sometimes be used to advantage in controlling a too forcible heart's action. As soon as the patient can swallow, it is the author's custom to administer a mixture of bromide and iodide of potassium, 30 to 40 grains of the former and 10 grains of the latter, and this is kept up for several days, then the bromide is omitted and the iodide used alone in increasing doses. In regard to the custom of administering croton oil or some drastic purge during the early stage, although sanctioned by almost immemorial usage, it is not only useless, but exposes the patient to the risk of making dangerous exertions, besides putting him in a filthy condition. The same objections in part apply to blistering and to the use of mustard. It is important to attend to the bladder and draw off the urine at regular intervals. The throat should be kept as free from mucus as possible and the surroundings of the patient rendered comfortable. These points have perhaps been dwelt upon with unnecessary minuteness, but one so often sees these cases handled in a mischievous manner. The physician, realizing the futility of any active treatment, is too apt to yield to any suggestion made by the family, and the object of this paper is to insist upon a simple and rational treatment of this condition.—*Maryland Medical Journal*, June 23, 1894.

#### NOTE ON THE ACTION OF IODINE.

The value of iodine as an absorbent has long been known. It is used to cause absorption of enlarged glands, thickenings due to chronic inflammation, and serous effusions, and this action

is believed to be due to a stimulation of the lymphatic system. Perhaps the most remarkable results due to the action of a compound of iodine as an absorbent are those which were attained by Major Holmes and Captain Cunningham in the treatment of goitre in India. They recommended that the enlarged thyroid should be smeared over with the red iodide of mercury ointment, and that then the patient should be made to sit with the neck exposed to the rays of the sun or of a hot fire for many hours. The results were extraordinary. Sixty thousand natives were treated gratuitously in two years, and a cure was almost always effected. Turner's object in presenting this communication is to offer a suggestion from the point of view of the physicist as to the mode of action of the iodine in these cases. We use iodine in physical experiments to cut off the visible rays of the spectrum. A solution of iodine in bisulphide of carbon will quench the visible rays of the sun, but will transmit the invisible heat rays. The solution is, in fact, remarkably transparent to the heat rays; it is diathermatous. Professor Tyndall, in 1868, was the first to point this out. The fact that the action of the red iodide of mercury is much intensified by exposing the patient to the direct rays of the sun has appeared to the writer to depend upon the physical action of the iodine. Further, the fact that the red iodide is the most efficacious points in the same direction, because the red substance would also serve to transmit the heat rays only. The solar radiation would be filtered by the application, and the gland would be subjected to the full blaze of the calorific rays without the vibrations of its molecules being altered by the visible rays. Professor Tyndall made some experiments with paper reddened by the red iodide, and found that it was also highly transparent to obscure radiation; it therefore falls into line with simple iodine. If the suggestion above made is correct, it is improper to cover the diseased parts to which iodine has been applied; we ought rather to expose them freely to the rays of the sun, or, failing that, to those of a good fire.—DAWSON TURNER, *Lancet*, May 12, 1894.

#### NOTE UPON PROFESSOR ANSCHUTZ'S PURIFIED CHLOROFORM.

PILCHER, the well-known surgeon of Brooklyn, contributes an article on this substance to the *New York Medical Journal* of June 23, 1894.

Professor O. Weitzel, of Bonn, has recently brought forward new chloroform, for which the claim is made by Professor Anschutz, its origi-



nator, that by the employment of salicylic anhydride ( $C_7H_4O_3$ ), obtained by the action of phosphorus oxychloride on salicylic acid, forming what is known as salicylide, for purposes of purification, an absolutely pure chloroform results. By the action of the salicylide upon the chloroform a salicylized body is obtained, in which the chloroform serves the same part as the water of crystallization in many salts, and consequently when heated the chloroform is separated in a pure state.

The first point to be noted in connection with its use is the fact that, owing to the absence of that pungent odor so commonly present in ordinary chloroform, there is a marked absence of hesitancy in the respiration and the occasional refusal to breathe observable in many cases where the latter is employed. The new preparation possesses a rather pleasant aromatic odor.

Whatever the cause, it is a well-known fact that in many persons, particularly those who have been in the habit of imbibing rather freely of alcoholic stimulants, even with the most careful administration of ordinary chloroform, there is a well-marked stage of excitement, this frequently amounting to violent struggling. Even in this class of cases this stage of the administration is only marked by an occasional exclamation when the salicylide chloroform is used.

The narcotic effect of the agent is obtained somewhat less rapidly than with common chloroform, and the patient must be carefully watched during the progress of the operation, to see that he does not come out from under its influence. Slow narcotism and quick recovery are not considered disadvantages by skilled anæsthetizers, for the reason that so profound an effect is not obtained, the purposes of the anæsthetization are completely fulfilled, and the element of danger is largely eliminated. Complete anæsthesia can be brought about in ten minutes; a longer time is very exceptionally required.

Every surgeon of experience dreads the cases in which chloroform produces a very rapid and at the same time a profound narcotic effect. In fact, statistics of fatal chloroformization show that in the large majority of cases the dangerous symptoms supervened very shortly after the commencement of the administration. It is likewise true that the cases in which violent struggling takes place are also to be dreaded, and many surgeons refuse to permit of the continuance of the chloroform, substituting ether therefor even when this has been apparently contraindicated, preferring to

accept the chances of the supposed untoward effect of this agent upon atheromatous vessels, weakened respiratory organs, or diseased kidneys, rather than risk the occurrence of a catastrophe upon the operating-table.

Next, the condition of the pulse is of importance in connection with the employment of the new chloroform. The heart's action, in no case under the writer's observation, has been either accelerated or weakened by its use. On the contrary, when the pulse had been weak and excited prior to the administration, as frequently observed in nervous women, as soon as the effect of the salicylide chloroform has been obtained a most pronounced improvement has been observed in this respect. A pallid face under these circumstances becomes of the pinkish hue of health, and remains so until long after the effects of the chloroform wear off; provided, of course, that excessive loss of blood, the prolonged manipulation of the abdominal contents, or other untoward circumstances incident to the operative procedure do not occur to produce the opposite effect.

Next, it is to be noted that patients recover consciousness much more promptly following the administration of Anschutz's chloroform than with the article heretofore in use. This occurs without those much-dreaded after-effects which are so marked a feature following anæsthetization with either chloroform or ether, as usually employed. In the case of an old man of seventy-four, upon whom the author operated for cerebellar abscess following middle-ear disease, in the practice of Dr. Zabriskie, of Glen Cove, the patient arose from the operating-table and walked across an intervening parlor to his bedroom, without apparent effort, within fifteen minutes after the withdrawal of the anæsthetic. This is not an exceptional experience, for it has been repeatedly noted that a marked absence of the usual head-symptoms, restlessness, muscular weakness, nausea, vomiting, and anorexia is a pronounced feature of the use of this agent.

A word as to the method of administration. At the present day no surgeon of experience will permit his anæsthetizer to administer chloroform by any other than the drop method. The days of forcing the administration by pouring the chloroform in a stream upon the mask or folded napkin have gone by. Steadily supplying the chloroform drop by drop, keeping up by this means the administration of a small dose frequently repeated, produces the desired effect in a length of time sufficient for all practical purposes, and relieves the oper-

ating surgeon's mind of much anxiety in this respect. While chloroform purified by Professor Anschutz's process can be given with somewhat greater freedom without the risks incident to rapid administration of common chloroform, yet the author himself pursues the drop-by-drop method with the head lowered, precisely as he would in ordinary chloroformization.

The quantity of the new chloroform required, even in the hands of those not skilled in its use, averages about one cubic centimetre for each three minutes of complete narcosis. In case the anæsthetizer is accustomed to its use, and keeps the patient just evenly balanced between unnecessarily deep narcosis and the beginning of the return of consciousness, a smaller quantity will suffice.

It is furnished by the manufacturers in brown-colored, graduated bottles, containing fifty grammes each, a quantity sufficient for the purpose of an average operation. An exceedingly simple dropper device is furnished with each bottle.

#### INTRALARYNGEAL THERAPEUTICS.

GORDON SHARP, in writing on this subject, says that, like everything else under the sun, the idea of the treatment of diseases of the respiratory tract by the direct application of drugs to the interior of the larynx is not a new one, but it is only within eight or ten years that it has been practically employed, and that in Edinburgh and Vienna chiefly. At first intralaryngeal injection was chiefly made use of in the treatment of phthisis, either with the view of applying antiseptics directly to the lungs, or of killing the bacillus, or of alleviating the troublesome cough. If with the former intention, it is certainly highly utopian.

The latest contribution to the literature of the subject from the pen of Professor Grainger Stewart shows the value of this plan of treatment in bronchiectasis, and it is probable that this is the disease which is likely to be most influenced by intratracheal treatment. By the old-fashioned methods of giving creosote or guaiacol by the mouth or by inhalation, patients are made ill before one is able to do them much good, for it cannot be doubted that some of the attacks of sickness and vomiting which occur in the course of the treatment of bronchiectasis by the persistent use of creosote are due to poisoning, and at the best one may only be setting a thief to catch a thief, for some of the ptomaines due to decomposition of the secretions in the dilated bronchial tubes must have

entered the circulation. By applying creosote, guaiacol, or other antiseptic directly to the interior of the trachea, whence it is certain to trickle down into the bronchial tubes, one may be able to prevent to a great extent the formation of putrefactive bodies, and it is the author's belief, founded upon experience, that this may be accomplished, and that by passing down antiseptics the patient can be prevented from giving himself mild attacks of septicæmia, which not only wear out his strength, but may even cut him off, and he is being placed on the high road towards recovery. The most probable cause of bronchiectasis is an atrophy of the walls of the bronchial tubes. The resulting dilatation is not a final one, but goes on increasing unless checked, and nothing so much tends to aggravate the condition as the filling up of the cavities and decomposition of the contents, with the production of foul gases. Now, if the secretion can be lessened and at the same time kept comparatively sweet, the tissues are given a chance of regaining a certain amount of tone, while at the same time those septicæmic attacks already referred to are prevented, while also the comfort of the patient is increased by diminishing the disagreeable odor and by relieving the irritating cough so frequent in bronchiectasis. Drugs injected into the trachea, while exerting a local action in the lung and bronchial tubes, find their way into the circulation, as proved in a case. A solution of menthol and guaiacol in olive oil so administered was detected in the urine in two hours, or rather the menthol was found, but the guaiacol could not be discovered, although tested for on several occasions. This points to guaiacol being broken up in the kidneys into some body which does not give the reaction. One can hardly hope to obtain brilliant results by the intralaryngeal method in cases of phthisis. Antiseptics so used have little effect upon the course of the disease in general; but for the alleviation of the cough a ten-per-cent. solution of menthol in olive oil, or in one of the pure preparations of the higher paraffins, is often of great service.

So much want of knowledge exists as to the process of intralaryngeal injection that one may be excused for giving a short account of the manner in which it is carried out. Although at first sight it appears to be a difficult operation, it is really a very simple one and easy of performance, only requiring a little boldness. The author has performed it nearly a hundred times, and on no occasion have any of the patients vomited. The patient sits facing the light; ask him to take hold of his tongue and

pull it well forward and to take a few deep breaths. The latter not only fill the chest, but likewise render the throat less sensitive. The operator either stands or sits not quite opposite to the patient, a little to the right. The syringe having been previously filled and rendered free from air by forcing a little of the fluid along the tube, the nozzle meanwhile being turned upward, he then passes the point of the syringe over the middle of the tongue; in this way the tip of the epiglottis is avoided. The operator should endeavor to just clear the tongue and strike a line which would pass straight along the middle of the dorsum of the tongue, and when extended backward would touch the back wall of the pharynx. In this way he reaches the glottis, and gently but firmly forces the nozzle of the syringe into the trachea at the moment the patient takes a deep inspiration. The patient soon gets to know when the syringe has gone to the right spot. The piston is now moved and the fluid drops slowly into the larynx. One must catch the glottis just as a deep inspiration has been taken, for soon the patient wants to inspire again, and with the glottis plugged this is impossible; but in every case the writer has found the time sufficient in which to inject one fluidrachm of oily fluid, and, if it is desired, the operation can be repeated even five times at a sitting without evil effects; in fact, in no case have I found the least discomfort follow. The first time of applying a five-per-cent. solution of cocaine hydrochlorate may be painted over the throat to render it anæsthetic, but the after-effects are dreaded by the patient who has once had this treatment, and if the syringe be boldly handled the patient experiences no discomfort. It is the shaking hand which causes tickling and so retching. It is like swabbing out the throat. The experienced laryngologist never causes his patient to vomit; it is only the beginner who is afraid to "lay on" who does that. At first it is perhaps also advisable to employ the laryngoscope, but in using it a single movement of the patient renders all dark, and as soon as confidence is gained it may be given up. The syringe the writer employs is one known as the Beehag in Edinburgh. The barrel is of glass and the mountings and nozzle are of black vulcanite, while the finger-rings are of electroplated material. It is objected to by some that this nozzle, being of vulcanite, cannot be boiled, and so disinfected, as could be done were it of metal. This difficulty can be so far overcome by the use of antiseptics and by each patient having a nozzle for himself. This does away with all likelihood of disease being con-

veyed from one person to another. Vulcanite being softer and more pliable than metal, there is less likelihood of injuring the soft parts. When about to use, the nozzle is screwed on and the point is turned upward, the piston being slowly moved so that some of the solution is ejected and all air removed from the nozzle and barrel.

As already stated, the vehicle for the application of drugs in this way may either be olive oil or one of the paraffins, and perhaps the latter is to be preferred because it does not become rancid. The drugs employed are chiefly of an antiseptic nature and belonging to the aromatic and tar series, such as creosote, guaiacol (two per cent.), menthol and thymol (five to ten per cent.), salol (five per cent.), salicylic acid (two per cent.), carbolic acid (one per cent.), and other drugs. A useful combination is the one suggested by Professor Grainger Stewart, consisting of guaiacol (two per cent.), menthol (ten per cent.), and olive oil (eighty-eight per cent.). It is non-irritating, and 1 or 2 fluidrachms may be injected into the trachea twice a day in cases of fetid bronchitis, bronchiectasis, or pulmonary phthisis. Other drugs may be used, provided they are conveyed in a non-irritating fluid and are of such a nature as not likely to cause local injury.—*Lancet*, April 14, 1894.

#### *THE OXYTOCIC ACTION OF SALICYLIC ACID AND ITS COMPOUND WITH SODIUM.*

VINEBERG concludes an article on this subject as follows:

1. Salicylic acid and its compounds may be found useful in scanty and delayed menstruation.
2. They should not be administered to pregnant women who have a predisposition to abort or who suffer from menorrhagia and metrorrhagia.
3. Their administration should be watched carefully in all cases of pregnancy, and on the appearance of any "show," or anything resembling labor-pains, they should be discontinued.—*New York Medical Journal*, June 23, 1894.

#### *THE MORTALITY UNDER THE CÆSAREAN OPERATION IN GREAT BRITAIN DURING THE LAST EIGHT YEARS.*

R. P. HARRIS, of Philadelphia, writes on this topic in the London *Lancet* of May 19, 1894:

Before discussing the relative merits of these two operations and their risks respectively, it

may be well to consult the British records of the former for the period since the improved method of performing it was in a measure introduced in 1886, as there is evidently in London a prevailing error as to what has been accomplished in the saving of life in Great Britain. When we look back to the early record of Dr. Thomas Radford, with its eighty-four per cent. of maternal deaths, and compare it with the results of cases we have recently collected, we find much ground for encouragement, although it is evident that much more might be accomplished in reducing the death-rate. The Cæsarean operation early performed, or done before labor, upon a good subject, has a much lower rate of mortality than when the woman has been exhausted by a long labor, and especially where the numerous attempts have failed to deliver under the forceps, version, or craniotomy.

When we group together all of the cases recorded for a given country, and state how many died and how many recovered, we get a very imperfect idea of the danger of the operation *per se*. We have a general knowledge of the risk, but what we require to look into and know is why one died and another did not, and it is the acting out of this knowledge that will eventually reduce the death-rate to a moderate percentage. If men had less fear of the operation, it would be undertaken in good season and result in fewer deaths. In order to find what has been the amount of loss in England and Scotland since November 1, 1886, we made a careful search for all of the published cases, and obtained the following,—viz.: For London, twenty-two operations: women died, nine; children lost, five. For Glasgow, thirty-two operations: women died, five; children lost, (?)\*. For the provincial towns, six cases: women died, five; children lost, three; making a total of sixty operations, with forty-one recoveries and (?)\* children saved, a mortality of nearly thirty-two per cent. of the cases, London losing forty per cent. Not being able to obtain the unpublished operations, we have failed to give a full list, but the proportion would not probably be materially altered. Our record, published and not published, for the United States, commencing with 1882,—the year the improved operation was introduced,—now shows one hundred operations, with thirty-eight deaths. Out of the first fifty, twenty-

four died, and of the second fifty, fourteen died. There were sixteen operations in 1893, with four deaths. This shows that there is no difference in the results of the two countries; both are far from creditable and might be made much more so. Our cities should at least do much better, and try to make some approach towards the successes of Leipsic and Dresden. Philadelphia has made a step forward by saving thirteen women and fourteen children under her last sixteen operations; two of the three deaths were in cases having very unfavorable prognoses. When we come to examine the dangers and results of symphyseotomy, where it has been carefully and thoroughly tested, we find a more encouraging record. Professor Paul Zweifel, of Leipsic, has given both operations an extended trial, with the following results: by the Cæsarean operation he lost the fourteenth and twentieth cases out of a total of thirty; and under twenty-three symphyseotomies he lost two children, but no women. We know of no fairer comparative test than this, as the same operator made both trials. We have had forty-four symphyseotomies in the United States, with a loss of five women and eleven children, five of the latter having been already dead before the operation. Compare this with our last forty-four Cæsarean sections, and we find: women lost, twelve; and children lost, twelve. Mortality of women under symphyseotomy eleven and four-elevenths per cent., and under the Cæsarean section twenty-seven and three-elevenths per cent., or more than double. A great deal has been said about the disabilities produced by symphyseotomy, but we have found very little of any form here. As the children delivered in our country under this operation have averaged eight pounds, we propose to limit the conjugate vera to two and three-quarters inches. The Italian subossous method we believe to be the best form of operation. In primipara the Neapolitan operators secure safety to the soft parts by letting the woman in many cases deliver herself. At one time three out of four women were left to nature after the section, but now delivery by the forceps is much more common. With proper care there should seldom be any strain upon the pelvis or injury to the vagina or bladder. Women have in a number of instances been operated upon twice, and one subject in Philadelphia has been delivered of living children, once by the Cæsarean operation and twice by symphyseotomy. She would not consent to any sterilizing method being made use of. The last twenty-eight symphyseotomies in the United States proved fatal

\* We have not the results as to the children in twenty of Professor Murdoch Cameron's cases; under the other forty operations there were nine lost.

to but two women, or seven and a half per cent. It will be a long time before the Cæsean operation can accomplish this in either England or America. When we can average fifteen per cent. we may feel encouraged. Single operators like Professor Cameron may save ninety per cent., but in general practice we do not expect so low a death-rate as one in ten.

#### THE TREATMENT OF TAPE-WORM IN CHILDREN.

In the *Journal des Praticiens* for May 26, DR. DESCROIZILLES relates the case of a girl, twelve years old, who had tape-worm. She complained of pains in the head, and her appetite was capricious. Diarrhoea and constipation alternated, and traces of tape-worm were seen in the stools. The author prescribed eight grains of calomel, and three days later the same quantity of santonica. This was followed by the expulsion of fragments of the tape-worm, thus confirming his diagnosis. Dr. Descroizilles hesitated to interfere directly by radical treatment, but owing to the persistence of the parents, determined meanwhile on an immediate intervention, and the following method was employed:

1. For two or three days a special diet, such as fish or vegetable soup, eggs, milk, and moderate quantity of bread.
2. During the last twenty-four hours nothing but milk.
3. On the day before the attempt at expulsion, towards evening, a laxative enema to be given. A second enema also to be given three hours before the administration of the following remedy:
4. Ethereal extract of male fern, 2 drachms [A large dose.—ED.]; calomel, 7 grains; peppermint water, 2½ drachms; gum-arabic, 75 grains; syrup, 5 drachms; distilled water, a sufficient quantity to make a mixture of two ounces. A tablespoonful to be taken every ten minutes.
5. Several hours later an enema of castor oil (of from 6 to 7 drachms) to be given.

Dr. Descroizilles prefers the ethereal oil of male fern to quince-seeds, kousso, pomegranate, and other preparations of male fern. He prefers it also to pelletierine, the action of which is less regular. It is the best remedy for children if it is given in capsules or in gelatin and sugar.

The author is disposed to try a formula given by M. Duhourcau, who combined green ethereal extract of male fern, chloroform, castor oil, and croton oil. The chloroform renders the worm torpid, the extract of male fern is a tæniacide, and the castor oil acts as a purgative.

The author thinks it is an ingenious combination which responds to the various indications in the rational treatment of tape-worm.—*New York Medical Journal*, June 23, 1894.

#### PRESCRIPTIONS.

To allay the itching in urticaria:

R Hydrarg. perchloridi, gr. iss;  
Chloroformi, ℥xx;  
Glycerini, ℥ii;  
Aq. rosæ, ad ℥viii. M.

To be dabbed on the affected parts.

*Carbolized Collodion*.—The following formula is a good one for the preparation of "carbolized collodion:"

R Acidi carbolic, ʒi;  
Ol. ricini, of each, ℥ss;  
Collodii, ℥i. M.

For vaginismus:

R Iodoformi, gr. xv;  
Extracti belladonnæ, gr. viii;  
Ol. theobromæ, q. s. M.

For one suppository; to be used at bedtime.

Useful in alopecia areata:

R Resorcin, ʒiss;  
Ol. ricini, ℥iss;  
Sp. vin. rectificati, ℥v;  
Balsami Peruviani, gr. viii. M.  
To be applied locally.

—*Medical Press and Circular*, 1894.

#### MALARIAL CACHEXIA.

In the *Virginia Medical Monthly* for July, 1894, GUICE publishes a paper on malarial cachexia and its treatment.

It is well usually to commence the treatment of this class of patients by giving 5 grains of quinine three or four times daily for two or three days. This will rid the system of at least a portion of the germs of malaria; and especially is the quinine necessary if there be present at the time paroxysms of fever, to which a great majority of such cases are subject. Quinine will also suspend periodical attacks of neuralgia, and, in fact, any other periodical symptom. Constipation, if present, should be relieved by a simple laxative or purgative, which should be repeated *p. r. n.*

Calomel, which is so constantly and so freely given in this country, is contraindicated in malarial cachexia. It adds to the already debilitated and anæmic condition by diminishing the number of red globules of the blood. It impairs the ozonizing function of this vital fluid, deranges digestion, and impairs nutrition, and

when given to ptialism, as is so frequently done, it charges the blood with fetid and effete material, destroys the plasticity of the fibrin, and increases the proportion of water. It also stimulates and increases the waste of the tissues and otherwise adds to the burden of an already struggling system, and to this may be added the fact that there is nothing in the pathology of the disease which calls for or indicates the specific action of mercury.

The proper treatment is one that is tonic and sustaining. Such is also the rational treatment, because the general condition is that of anæmia. Whether the disease be in the stage of recent development and marked by only a few recurrences of chills and fever, or of long standing and presenting a condition of profound anæmia, enlarged spleen and liver, sallow complexion, etc., the treatment should be about the same. An excellent combination and one the author has used more frequently and more successfully than any other is the following :

℞ Quinæ sulphatis, ℥iv;  
Ferri sulph. exsic., ℥i;  
Acid. arsenosi, gr. ii;  
Ext. gentian, q. s. M.  
Divide in pill No. 40.

Sig.—1 three times daily after meals.

This prescription may be dispensed either in pill or capsule, at the option of the patient, and should be taken continuously for not less than twenty-eight days. He has found after much experience that failure to continue the treatment, whatever it be, for the above period will commonly result in a return of the original condition, and hence the rule should be rigidly applied in all cases. In severe, protracted, or advanced cases it is well to order 5 grains of quinine, to be taken once daily (morning best) in connection with the above pill for the first ten to fourteen days, after which the pill is continued alone; while this is not essential to success, he has found it useful in securing prompt and rapid improvement in such cases.

2 or 3 grains of ferri pulvis to the pill may be substituted for the dried sulphate with probably as good results in most cases, and  $\frac{1}{10}$  grain of strychnine sulphate may be added if indicated or if desired by the prescriber.

Should paroxysms of fever supervene pending the use of the pill, it may be suspended and 5 grains of quinine given three or four times daily for two or three days, after which the pill should be resumed.

Should the patient be unable to swallow a pill or capsule, the following combination will be found very successful :

℞ Quinæ sulphat., ℥i;  
Tinct. ferri chlorid., ℥i;  
Potass. chlorat., ℥ii;  
Syr. zingib., q. s. ad ℥iv. M.

Sig.—Teaspoonful three times daily in water after meals.

Where the poverty of the patient has been such as to prohibit the use of prescriptions costing so much as those above given, he has used with very good success the following :

℞ Tinct. ferri chlorid., ℥iiss;  
Liquor acidi arsenosi, ℥iiss. M.

Sig.—20 to 25 drops in water three times daily after meals.

One dose of 5 grains of quinine given daily before breakfast will add to the efficacy of the above cheap and simple combination.

Abundant experience with the virulent malaria of the southern Mississippi Valley enables the writer to speak confidently of the value and success of the foregoing treatment in all conditions of chronic malarial poisoning. In many cases, and especially the more obstinate, the disease may be remedied by the persistent use of arsenic alone (Fowler's solution, 3 to 5 minims), given three times daily after meals. He has also used with admirable success in the more obstinate cases the following :

℞ Acid. nitric., ℥i;  
Ferri sulph. (C. P.), ℥i. M.

When effervescence ceases add,—

℞ Aquæ, ℥xii;  
Quinæ sulphat., ℥i;  
Strychnæ sulph., gr. iiss;  
Potass. nit., ℥ii. M.

Sig.—Tablespoonful in water three times daily after meals.

This is an incompatible prescription, but an excellent tonic in conditions of anæmia. It is intensely bitter, and is for that reason objectionable.

In babes and young children, malarial cachexia will generally yield promptly to 1- or 2-grain doses of ferri et ammoniæ citrat., given three times daily in solution. For this class of patients medicine should be made as palatable and attractive as possible, and with this view he uses the following :

℞ Ferri et ammon. cit., ℥i to ℥ii;  
Glycerin., ℥ss to ℥i;  
Elix. simp., ℥i;  
Aquæ, ℥ii. M.

Sig.—Teaspoonful *ter in die* after taking food.

1 tablespoonful daily of febriline (2 grains to 1 drachm) may be given in connection with

this prescription for the first week in advanced cases. In the treatment of children, as in adults, the medicine should be continued for twenty-eight days. This rule is strenuously advocated for the excellent reason that very many patients will relapse if the treatment be continued for a shorter period.

The timely treatment of malarial cachexia is a sure prophylactic in the great majority of cases of that dread disease—malarial hæmaturia—which has in the last quarter of a century destroyed so many young and valuable lives. This latter disease, as is well known, develops in nearly all instances in persons who are worn down by malarial cachexia, and hence the number of cases would be enormously lessened by simply relieving the cachexia and thus robbing hæmaturia of its preferred and easy victims.

#### *HEMIPLEGIA DURING PERFLATION OF AN EMPYEMA CAVITY.*

It seems to be necessary to apologize for publishing a case in which the accident of hemiplegia occurred during the treatment of empyema, since that complication has been almost entirely relegated to the past by the abandonment of the practice of "washing out." Cases, however, arise from time to time in which the offensive character of the discharge necessitates the adoption of irrigation with an antiseptic fluid, and the following case is brought forward because it seems to suggest that the accident may easily be prevented. Here hemiplegia occurred, not during washing out, but while air laden with eucalyptus vapor was being puffed in. Fluid used for irrigation of the cavity is always warm, while the air in this case was at the temperature of the surrounding atmosphere, or possibly colder, since in taking up eucalyptus vapor it may have become chilled. This suggests that the application of cold to the pleural surface may be a factor in the production of the accident, and that in those cases that have occurred during washing out, the temperature of the fluid may have been allowed to fall below that of the body.

A man, fifty-five years of age, was admitted into the infirmary on January 13, 1891, with signs of fluid in the left side of the chest. On the 15th he was aspirated, and the cavity was found to contain pus. On February 3 the empyema was opened in the ninth space in the post-axillary line. On the 23d the cavity was washed out (it had been washed out on several previous occasions), and afterwards some air laden with eucalyptus vapor was puffed in. The patient suddenly complained of giddiness,

turned very pale, and fell back apparently dead. Pulse weak and very irregular. After artificial respiration had been kept up for a few minutes respiration recommenced and the pulse became good. He was semi-conscious for two hours after. 24th.—This morning the right arm and to a less extent the right leg are paralyzed. He is from time to time fairly sensible. He says, "Oh, dear!" The right arm becomes rigid when the patient tries to raise himself with the left. He is very restless and irritable; no facial paralysis can be made out; the pupils are equal, medium, and sluggish; the knee-jerks are brisk, the right being more so than the left; the plantar reflexes are not well marked; there is no clonus; the patient sleeps with the right eye open. 25th.—The patient speaks fairly well, using numerous words; he still seems dazed. His sister-in-law came here to see him yesterday, but he did not recognize her, though he could say a few words. He has regained considerable power in arm and leg. 26th.—The patient now seems almost as well as before the attack, although he is slightly dazed; he says that he remembers nothing; he moves the right hand and arm well, but still weak. The patient perfectly recovered, and left the infirmary with the wound healed in the course of a few weeks.

The author suggests that chilling of the pleural surface may possibly be a factor in the causation of hemiplegia. Before giving reasons for that supposition the various views of the pathology of the accident may be referred to. When the accident first attracted attention the detachment of a venous thrombus during the washing out of the empyema cavity was supposed to occasion embolism of a cerebral artery and give rise to the alarming symptoms and hemiplegia. In fatal cases, however, no such embolus was found. It was then suggested that the hemiplegia was reflex, due to some obscure inhibition of the action of one-half of the cerebrum. Against that view it was urged that the pleural surface could not be sensitive, since it had become transformed into the wall of an abscess cavity. M. Desplats, after reporting a case, suggested that, while in some the symptoms might be reflex, in others they were probably due to the toxic effect of the absorbed antiseptic, while in still others they were merely the manifestation of epilepsy or of uræmia. If epilepsy explains any case, they must be few in number, since, although epileptiform convulsions may be the main feature of this accident, the termination generally, either in death or in hemiplegia, distinguishes them from the convulsions of that disease. Uræmia

is more closely simulated; both hemiplegia and epileptiform convulsions may be present, the latter being sometimes followed by rapid death. But in the accident under notice failure of the pulse and respiration at the onset are marked features and give evidence that although there is some resemblance to uræmia, there are small, yet obvious, differences. The invariable suddenness of onset during the washing out is also against the acceptance of uræmia as the explanation.

It can hardly be supposed that the antiseptic is responsible for the hemiplegia, since that used had varied, and poisoning by the commonest antiseptics does not give rise to such symptoms; nor is it likely that these poisons would act mainly upon one cerebral hemisphere. It has been already mentioned that embolus is negatived as a cause for hemiplegia since in fatal cases no emboli have been found. If, therefore, one rejects emboli, epilepsy, uræmia, and poisoning by antiseptics, the only theory left is that the hemiplegia is due to shock. It certainly seems strange that a thickened pleural surface covered with abundant, partially organized, exudation should be able to transmit any nervous impulses to the central nervous system; but although the surface may not be sensitive to ordinary irritation, it cannot be said that a chilling of the wide vascular surface may not be capable of producing some mysterious effect upon the cerebral circulation. In the above case a few cubic centimetres of air laden with eucalyptus vapor had been puffed in when the accident occurred. Mechanical irritation by previous washing out had been harmless. It seems, therefore, reasonable to suppose that the effect of the air was not harmful from direct irritation, but indirectly through the production of cold. Possibly in every case in which the accident has occurred the antiseptic fluid has been allowed to fall below the temperature of the body. This would explain why the accident does not usually occur until the treatment has been carried on for some time. When the treatment is first commenced, more attention would probably be paid to the temperature of the fluid than at some later period in which the patient was becoming convalescent. A case referred to in the *Lancet* tends to support this view of the effect of cold. In that case .8 cubic centimetre of a three-per-cent. solution of peroxide of hydrogen had been injected, when the respiration became oppressed, clonic convulsions occurred in the right arm, the head turned to the left, and the patient died in ten minutes. A solution of peroxide of hydrogen must have been injected cold, and the quantity was too

small to have had a mechanical effect. The value of the evidence it affords is, however, somewhat diminished by the fact that the injection was not the first, but the seventh. It must also be admitted that there is one fact that seriously militates against this view of the pathology of the accident. Were the view correct, one would expect the hemiplegia to bear a constant relation to the position of the empyema. Although the hemiplegia is nearly always upon the same side of the body as the empyema, in one case recorded by M. Berbez it was on the opposite side. In the case recorded in this paper the hemiplegia was also, curiously enough, on the opposite side of the body. One is obliged to admit, therefore, that the above view as to the cause of the accident rests upon somewhat insufficient evidence, yet when necessity arises for washing out an empyema cavity it would be well to pay careful attention to the temperature of the fluid.—FISHER, *Lancet*, March 17, 1894.

#### TREATMENT OF EROSIONS OF THE STOMACH.

EINHORN, of New York, believes that the local treatment of the stomach in the presence of erosions plays a great rôle. The astringent effect of nitrate of silver solutions in similar more accessible affections led the writer to apply this substance directly to the inside of the stomach. This can best be achieved by means of the spray. It was on this occasion that he constructed the gastric spray apparatus employed by him.

The treatment is given in the following way: First, the stomach in a fasting condition is washed out with lukewarm water; when all the water has been emptied, the tube is removed from the stomach. The spray apparatus is filled with ten cubic centimetres of a one-to-two-per-mille solution of nitrate of silver, the tube end dipped into warm water and inserted into the stomach (length of tubing, fifty centimetres); thereupon the whole, or at least the greater part, of the solution in the bottle is sprayed; the bottle is then opened and the spray-tube removed from the stomach.

In fact, the good result of this method of treatment can frequently be best shown in the affection in question, for after spraying has been done several times the small pieces of gastric mucosa cease to appear. Associated with the objective symptom there appears an amelioration in the subjective feeling of the patient, the pains grow considerably less or entirely disappear, and the strength increases.



He usually combines the nitrate of silver spray treatment with intragastric galvanization, alternately applying the spray or the galvanization. The reason for the use of galvanization in these cases lies in the fact that he had such effective results in two other cases of probable erosions of the stomach, complicated with heart-trouble, by means of galvanization alone. The methodical application of intragastric galvanization combined with the spray seems to increase the curative effect.

As to diet, there is no need for being rigorous in these cases. Frequent meals, avoiding heavy vegetables, salads, and pastries, are all that is ordinarily required.

Cold ablutions, light gymnastics, out-door life, are to be warmly recommended.

Of medicaments, condurango and nux vomica are frequently, and a good, easily assimilated iron preparation always, appropriate.

Although these medicaments may be of value as adjuvants, we should rely mainly upon the local treatment.—*Medical Record*, June 23, 1894.

#### *A CASE OF RUPTURED GASTRIC ULCER SUCCESSFULLY TREATED BY ABDOMINAL SECTION AND SUTURE.*

MORSE has recently reported the following interesting case before the Royal Medico-Chirurgical Society of London.

The patient, a young woman, aged twenty, having symptoms of gastric ulcer, was suddenly seized with violent abdominal pain, followed by faintness and vomiting. The pain, which was of a burning character, commenced over the region of the stomach and gradually extended all over the abdomen. Abdominal section was performed nearly five hours after the commencement of the symptoms; the contents of the stomach were found in the peritoneal cavity. The stomach was withdrawn, and a perforation was found on the anterior surface, close to the cardiac orifice. The organ was washed out, and the perforation was closed with Lembert's sutures; the stomach was returned, the peritoneal cavity was washed out, and the wound was united. No food was given by the mouth for sixty hours, and at the end of three weeks the patient was quite well. Mr. Morse had not up to that time seen a record of any other successful case of the kind in England, though cases had been reported by Drs. Penrose and Dickson, also by Mr. Gilord, Mr. Barling, and Mr. Warrington Haward.

In the ensuing discussion, BARWELL said he

had taken much interest in this subject and had collected a large number of cases (twenty-five in all), and he had since heard of four others. One of the cases must be excluded from this series, as it was really a case of localized abscess, which was opened and drained. The abscess was no doubt due to the perforation of a gastric ulcer, though the opening into the stomach had already healed at the time of the operation. In one case, reported from abroad, the abdomen was opened from the xiphoid to the umbilicus without finding the perforation; the right rectus was then divided, the lesser omentum scratched through, and a fruitless search was made over the posterior wall of the stomach. The left rectus was then likewise divided by another transverse cut, and an opening as large as a pea was found on the anterior wall of the stomach, near the lesser curvature and the cardiac end. The patient mended slowly, the recovery being jeopardized by subphrenic abscess, localized empyema, and abscess of lung. He thought that certain lessons could be drawn from the recorded cases with regard to matters of detail in the treatment which might lead to success or otherwise. The operation should be performed as soon as possible after the occurrence of the injury. The best position to open the abdomen was some little distance to the left of the middle line, for gastric rupture was commonest nearer the cardiac end. The front wall of the stomach should then be very thoroughly searched, for though ulcer was commonest behind, yet perforation was rarer there, the usual sequence being gradual perforation of the viscus, with formation of abscess. When there was free gas in the peritoneum, a peculiar thrill could be obtained, made up of rapid vibrations, and it was often accompanied by the sudden disappearance of liver dulness. The rupture might easily be concealed by the puckering of the stomach after it had partially emptied itself through the rent. If the operation were performed later, the best guide to the rupture would be the point of chief peritonitis and effusion of lymph. In four cases the site of rupture had been overlooked, being concealed by the exudation. If the perforation could not otherwise be found, the patient might be made to drink coffee or methylene-blue solution, in order that by leakage the place of rupture could be betrayed. He did not agree that it was necessary to cut the ulcers away, for they healed as well if tucked in. The careful washing out of the stomach through the rupture was of great advantage. It was wise to eschew antiseptics in washing out the

peritoneum, for if these solutions were strong enough to be germicidal, they irritated the peritoneum or poisoned the patients, and if they were weak they were futile. He himself had used distilled water for the purpose of flushing out, and the water, if warm, served to abolish the symptoms of collapse; the best temperature was 112° F.

MR. WARRINGTON HAWARD congratulated Mr. Morse on his correct diagnosis and prompt treatment. When a perforation occurred suddenly into the general cavity of the peritoneum, the ulcer would almost certainly be found on the anterior surface of the stomach, those occurring posteriorly mostly forming adhesions. The necessity for prompt action in these cases was great, for the danger became greater the longer the case was left. Not only did the collapse become more profound, but the contents of the stomach were apt to become absorbed by the lymphatics of the diaphragm and, being carried upward, to cause a basal pleurisy or pleuro-pneumonia. Though the symptoms were usually well marked, yet the diagnosis was not always easily made. Immediately symptoms of basal pleurisy or of pleuro-pneumonia occurred, a careful exploration of the pleura should be undertaken. He was still inclined to think that the incision should be made in the middle line, for the perforation might be situated at any point on the anterior surface. If the ulcer were to be closed by suture he saw no gain in a preliminary washing out of the stomach, though he attached great importance to the thorough washing out of the peritoneum. Hot water was possibly the best thing for this, and it might, as had been pointed out, be useful in checking the collapse.

MR. PAGE referred to some cases, of which he gave the following particulars: In his first case the operation was performed forty hours after the perforation had taken place; the opening was firmly closed, but the general invasion of the peritoneal cavity by inflammation rendered cleansing impossible. In the second case the operation was performed eighteen hours after perforation, and he opened the abdomen over the site where the first pain had been felt. The perforated ulcer was close to the cardiac end of the stomach and so far from the surface that he found it practically impossible to close the orifice; the patient lived a few hours only, and afterwards it was found that leakage had taken place. In the third case it was agreed after consultation to defer operation, for there were indications that the peritonitis was purely local. After four days a drainage-tube was passed into a cavity in which

there were pus and gastric contents. Afterwards extensive exudation was found between the stomach and the diaphragm, and a second ulcer was found on the very verge of perforation on the posterior wall of the stomach. In a case in which his colleague, Mr. Pepper, had washed out the stomach he had found much difficulty to arise therefrom. He had received from Dr. Maclaren, of Carlisle, particulars of three cases of gastric ulcer treated by laparotomy, with one recovery. In the first case the perforation had occurred rather less than twelve hours previously, and there was much collapse; the patient died three days later from peritonitis. In the second case the perforation had happened nine hours before, and it did well after operation. In the third case the perforation had occurred four hours previously, and death occurred three days later from suppurative peritonitis. Dr. Maclaren attributed the fatal results to imperfect washing out of the peritoneum,—*Lancet*, March 17, 1894.

#### CRYSTALLINE DEPOSITS IN THE URINE.

Bearing in mind the etiological factors considered above, the treatment required to prevent these crystalline deposits obviously consists in preventing the formation of uric acid and calcic oxalate in the system; and, secondly, in preventing their precipitation in the kidneys. The first result is to be gained by hygienic and dietetic measures, while the second requires medicinal treatment.

The hygienic measures consist of an out-of-door life, as far as practicable, exercise, and baths. The plethoric, high-living, uric-acid victim, with his tissues crowded with waste material, evidently requires all the out-of-door exercise he can stand and warm baths to stimulate the eliminative action of the skin. The other class of debilitated, anæmic, neurasthenic subjects of uric acid or calcic oxalate are equally in need of fresh air to assist their feeble oxidizing powers, but we must be careful not to overtax their weak constitutions with too much exercise and bathing. In the consideration of diet it is especially necessary that digestion should be perfectly performed, failure in this respect causing more defective metabolism than could possibly arise from a little more or a little less of some particular article of food.

Most persons are able to digest lean meat more easily than starchy, saccharine, or fatty substances. In the latter three classes of foods, if digestion is slow, fermentation is sure to oc-

cur and the resulting acids are taken into the blood, thus lessening its alkalinity and solvent power and interfering with all the metabolic processes. In the majority of cases, therefore, a diet containing a considerable proportion of albuminous material, supplemented by succulent vegetables, will be more easily digested than one in which the starchy and saccharine elements predominate. The diet must be carefully suited to each individual case. Stimulants of all kinds must be avoided. In cases of oxaluria we must avoid the ingestion of vegetable substances containing oxalic acid, such as tomatoes, sorrel, rhubarb, onions, turnips, cauliflower, and asparagus. The free use of pure water and of milk is extremely important. As we have already seen, the urine containing crystalline deposits is almost always concentrated and highly acid. Water at the same time dilutes the urine and renders it relatively less acid.

Drinking hot water at bedtime acts very beneficially as a diuretic and gives a copious flow of urine in the morning,—a point of importance, as Roberts and others have shown that uric acid is largely precipitated in the urine in the early morning hours.

The medicinal treatment to prevent the formation of crystalline deposits of uric acid differs from that required in oxaluria and will be considered separately.

We can, as pointed out by Roberts in his recent Croomian lectures, effectually prevent by medicinal treatment the occurrence of those conditions of the urine under which alone the formation of uric-acid crystals is possible. The immediate determining cause of the precipitation is excessive acidity of the urine, and the essential indication of preventive treatment is to diminish the acidity.

Chemically, it is impossible for uric acid to be deposited from an alkaline urine and not at all likely in a neutral or feebly acid urine. A study of the normal variation of the urine at different periods of the day and night leads to the inference that the liability to uric-acid gravel rises to a dangerous intensity only during certain limited portions of the twenty-four hours. The character of the urine has been shown by Roberts to be most affected by the digestion of food, by prolonged fasting, and by sleep.

A meal, whether composed of ordinary mixed food, or of purely animal, or purely vegetable substances, produces two constant effects. It lowers the acidity of the urine and increases its volume. Conversely, prolonged fasting raises the acidity and diminishes the flow of urine. During the hours of sleep, which are

also hours of fasting, the acidity of the urine reaches its highest point and the flow of urine reaches its lowest point. The proportion of uric acid in the urine is highest during the time of sleep, but the hourly excretion is highest during the hours following a meal.

Obviously, therefore, the period when there is most risk of precipitation in the kidneys is during the time of sleep, and especially in the early morning, during the two or three hours before breakfast. In sleep, also, the horizontal position and the bodily repose make the urinary stream more sluggish and predispose to crystalline precipitation. On the other hand, during the day and the waking hours the recurrence of the meals keeps the urine at a low degree of acidity, or even renders it for a time neutral or alkaline, while the renal stream is comparatively full and rapid, and its descent from the kidneys is favored by the force of gravity. It is, therefore, only during the critical period of the latter part of the night that medicinal treatment is required. In the milder cases a single full dose of one of the alkalies taken at bedtime suffices to prevent the formation of uric-acid concretions. For this purpose the citrate of potassium is, perhaps, the best preparation to employ. The dose for an adult is from 40 to 60 grains, dissolved in a few ounces of water. In severer cases a second but smaller dose should be taken during the night.

Haig has shown also that salicylate of sodium has a decided influence in increasing the excretion of uric acid. Phosphate of sodium is at the same time a good alkalizing and laxative agent; it is also, as we have seen above, the principal natural solvent of uric acid in the urine. Roberts also points out that salines exercise a protective influence against the precipitation of uric acid. 'People who take very large quantities of common salt with their food experience a practical immunity from stone. On the other hand, it is very frequent among the children of the poor, who are fed very largely on farinaceous articles, and among the natives of India, who feed on rice. Acids and iron interfere with the solubility of uric acid and with its elimination.

A fact of great practical importance—mentioned by Haig and quoted by Osler—is that "lithia, although a beautiful solvent of uric acid in a test-tube, yet when given by mouth never reaches the uric acid at all, because it at once forms an insoluble compound with the phosphate of sodium in the blood, thus removing from that fluid one of the natural solvents of uric acid and diminishing its power

of holding uric acid in solution." Lithia waters, then, have been found useful, because the beneficial effect of the water itself exceeds the harmful effect of the lithia contained in it. This is directly opposed to the prevalent idea of the value of the lithia compounds in the uric-acid diathesis.

For a plethoric habit, the free use of alkaline mineral waters, such as Carlsbad and Vichy, is important.

In the treatment of oxaluria much less is accomplished by chemical agents. The usual tonics suitable for cases of debility are often required. Dilute mineral acids, especially nitromuriatic acid, are considered by many as almost specifics. Their beneficial action is probably accounted for by their power to correct digestive disturbances. Phosphate and chloride of sodium have a distinct solvent action on oxalate of lime. It has also seemed to me, in a few cases, that sodium salicylate has caused the crystals to disappear.

The treatment of calculus in the kidney will not be considered here, as the so-called "solvent" remedies have been found entirely unreliable, and the final resort must be to surgical methods.—*Boston Medical and Surgical Journal*, June 7, 1894.

#### CASE OF URTICARIA PRODUCED BY SANTONIN.

The following case of urticaria produced by santonin, which has lately come under the reporter's notice, presents interesting features:

A. B., a child, seven years of age, was brought to the author April 21, 1894, suffering from thread-worms, which her mother said had been present for some three years. She had been under treatment once before for this cause, but had not taken santonin on that occasion. There was nothing remarkable in the child's appearance, except that she was rather pale and flabby and had a slight cough. 3-grain santonin powders were ordered, to be taken fasting on alternate mornings for three days, preceded on the previous night by castor oil and followed by a similar dose. She had a dose of castor oil on the night of April 21, and her first powder at 7 A.M. on the 22d. On this occasion the only sign of any eruption was a red oedematous patch the size of a five-shilling piece on the left forearm, which was rather irritable, and was ascribed by her mother to an insect-bite. On the 24th she had her second powder at 7 A.M. By 8 A.M. the face was red and puffy, and in a short time the whole body and the limbs were oedematous and covered

with a typical urticarial eruption, consisting of large white wheals surrounded by a broad red areola. There was some irritation, but it was not at all intense. There was no constitutional disturbance, and by 11 A.M. the rash had almost entirely disappeared. To verify the cause of the eruption the child was given the last powder at 7.20 A.M. on the following morning, and in an hour a similar rash, if anything more intense, had appeared. The bowels were freely opened about 9 A.M., and the rash had entirely gone by 10 A.M.

There do not appear to be many cases of this interesting eruption recorded. Sievking mentions a similar example, which is the only one referred to by Crocker, and Morrow, in his interesting work on drug eruptions, mentions the above case and a number of others recorded by Hubert, in which the administration of santonate of sodium was followed by an eruption of pin-sized vesicles in the trunk and limbs. Underwood also relates a case in which the taking of 5 grains of santonin in an adult was followed by a morbilloid cuticular efflorescence and a punctiform rash on the buccal and pharyngeal mucous membrane. It appears, therefore, that the santonin idiosyncrasy is rare, and that the eruption may vary in character, is accompanied by little or no constitutional disturbance, and rapidly disappears, leaving no ill effects.—G. STEWART ABRAM, *Lancet*, May 12, 1894.

#### HOW TO GIVE PILLS TO CHILDREN.

BOND, in the *Virginia Medical Monthly* for July, 1894, states that the inability of smaller children to swallow pills without chewing them up renders the administration of certain ill-tasting drugs to such patients very difficult, and really in many cases becomes a very serious hinderance to necessary treatment.

This fact is especially striking when we consider the treatment of malarial fevers in small children by means of quinine. The hypodermic method and administration by the rectum are too unhandy for general use. Application through the unbroken skin is too uncertain and inconvenient. The drug must be given by the mouth in nearly all cases, or not used at all. Solutions of quinine in acidulated water are, indeed, most efficacious in the cure of the disease, but the philosophy of the Stoics has not yet become a fad among the grown folks of America, and we need not expect children to practise its teachings. Quinine may be dissolved in tincture of iron, and, when syrup is added, the combination of nasty things

will sometimes be taken without much objection by older children; but iron is often unnecessary or contraindicated in these cases.

The administration of quinine in bulky mixtures of substances which cover the taste of the drug is open to grave objections, for it may well be questioned whether the large quantities of licorice, yerba santa, chocolate, etc., are not positively injurious in many cases to the already enfeebled stomachs of young patients, or even of older ones, ill with severe malarial diseases.

Tablets of chocolate containing definite quantities of tannate of quinine have found some favor with physicians and are greatly enjoyed by certain children. They, however, are open to the objection that tannate of quinine is not a sufficiently active preparation of the drug to warrant reliance upon it in severe cases.

With some confidence of receiving an attentive hearing he recommends a method he has found efficacious in his own practice. The quinine sulphate is ordered in pill form with dilute acid, generally aromatic sulphuric acid, and the mother of the patient is directed to break up each pill and mix it with a little brown sugar. This is put upon the tongue dry, and a mouthful of water carries it into the stomach. Sometimes sweet chocolate is broken up and used instead of brown sugar, or it is taken into the mouth before and after the bits of quinine pill and sugar. A stick of licorice root may be used in the same way. In this way a very little of the masking substance suffices at each dose. The pill of quinine sulphate made with aromatic sulphuric acid is not only very soluble, but also in its smallest possible bulk.

It will readily be seen that by means of the pill broken with brown sugar or other masking agent, any drug or mixture of drugs which can be made into pilular form may be administered to children with facility. Since it occurred to the author to try this method he has never felt the need of mask mixtures for such prescriptions. Moreover, the mothers of the children take kindly to the plan.

#### INFANTILE THERAPEUTICS.

LUZET (*Arch. Gén. de Méd.*, June, 16, 1874) gives a critical review based on the work of Legendre and Broca. The special points really consist in the phases of development in the infant, in the special feature of disease which here proceeds rapidly towards aggravation or recovery, and in the physiological peculiarities of more active metabolism, of more

rapid absorption and circulation, of intact emunctories, and of a more impressionable nervous system. In regard to feeding, the regular increase in weight must be relied upon. A tuberculous nurse must not be employed, for if bacilli do not pass out with the milk, toxins can; in addition, the milk is less rich in fat and casein. Overfeeding the nurse must be avoided. Of course, artificial feeding is only a method of necessity. The milk should be sterilized by means of steam under pressure. The therapeutic bath is used to reduce temperature; the bath is then gradually cooled down from 2° F. below the child's temperature to 30° F.; it is useful in enteric fever, severe scarlet fever, and cerebral rheumatism. The bath with increasing temperature is of value in collapse, such as occurs in diarrhoea; it may also be a vehicle for certain medications. More strictly therapeutic measures are then discussed in the following order:

1. Evacuating medication. The stomach-tube is very useful, as well as intestinal injections and emetics. Apomorphine is dangerous.

2. Promotion of excretions. The best diuretic is water. Large rectal injections of cold water constitute a good method of inducing diuresis. In uræmia, icterus, and all intoxications large injections are useful. Cold baths are also of service in increasing renal excretion. Digitalis is well borne by children. Diaphoresis is best obtained by physical agents,—heat, wet sheets, hot drinks. Diuresis is more efficient than diaphoresis.

3. Sleep should never be interrupted in disease, with very few exceptions. It may at times be necessary to induce sleep. This may sometimes be done by removing something which interferes with sleep. Physical agents are again the best means, such as tepid baths, etc. Opium requires caution; chloral is useful; bromides and antipyrin may be of service.

4. Fever is controlled by external agents,—baths, etc. Quinine, antipyrin, and sodium salicylate may be useful adjuvants.

5. Food is the best tonic. Alcohol is the best stimulant.

6. Antiseptic medication plays a very important part in infantile therapeutics. Carbolic acid in any form must be avoided. The mouth should be cleansed with alkaline lotions. Glycerin is a good non-fermentable medium. Antisepsis of the stomach may be procured by washing it out, and, together with the intestine, by the use of bismuth, salicylate, salol, etc. Calomel is a powerful intestinal antiseptic.

Antisepsis of the large intestine is obtained by means of irrigations containing naphthol, etc. It is indicated in typhlitis, appendicitis, membranous colitis, etc.—*British Medical Journal*, June 30, 1894.

#### PARA- AND ORTHOCHLORPHENOL IN TUBERCULOUS AND OTHER DISEASES.

N. SIMANOFFSKI (*Vratch*, No. 8, 1894) has used solutions of monochlorphenol in glycerin in the strength of five per cent., ten per cent., and twenty per cent., and points out as special features of these very powerful disinfectants that they do not irritate the mucous membrane, even if applied in a twenty-per-cent. solution, that they form no stable combination with the tissue albumins, and that they are therefore able to penetrate into the depth of the diseased organ. The tuberculous cases treated were mostly very advanced and serious affections of the throat with impairment of voice and difficulty in swallowing. In one case there was, besides these symptoms, a tuberculous ulcer at the root of the tongue; in another a similar ulcer on the whole posterior wall of the pharynx and part of the nasopharyngeal region. All cases, without exception, even including the last one, in which there was a very advanced affection of the lung, improved quickly under the local treatment with monochlorphenols; the ulcers became clean and showed a tendency to heal, and all the accompanying symptoms disappeared. Equally good results were obtained in chronic thickening and hyperplasia of the mucous membranes, which disappeared after a few applications of the same solutions. Simanoffski is of opinion that the monochlorphenols will find a large field of application in diphtheria, etc., and he unhesitatingly recommends them in laryngological practice in preference to iodoform, pyoktanin, menthol, etc., especially as they also possess anæsthetic properties.—*British Medical Journal*, June 30, 1894.

#### TREATMENT OF NIGHT-SWEATS OF PHTHISIS.

CONKLING writes a valuable paper on this topic. As the result of wide experience he finds aromatic sulphuric acid is at times a useful remedy. It possesses some marked disadvantages: it could not be used for any length of time; it frequently produced constipation; and it interfered, after a time, with some special lines of treatment devoted to the pulmonary lesion.

The remedy was given in sweetened water; or, if not objectionable to the patient, in water alone. The dose used was 10 to 15 minims at bedtime (one dose); or it was given in three doses, in 7 to 10 minims each dose. The first of these was given in the late afternoon, the second in the early evening, and the third at bedtime. The latter method was found the better.

This remedy diminished the sweating in all the administrations, but stopped it in less than half. But it never stopped the sweating at once; diminution always came before cessation.

Camphoric acid was found to be very uncertain in its action. Its successes and failures did not seem to bear any relation to particular cases. It sometimes would succeed where before it had failed. It had no after-effects.

The dose given was 30 grains in water at bedtime.

This remedy had a large number of failures. It diminished the sweating in a very few, and was successful in a little over one-third of the administrations; but even in some of these the perfect cutaneous dryness of some other remedies was not noted.

Chloralamid was found to be a very important and valuable remedy. Mention of its use as an anidrotic has appeared in print several times. The author's own knowledge of its power in this direction was obtained by accident soon after its introduction into the American market. The drug was being used in tubercular patients as an hypnotic. The patients, after giving their answer as to the effect of the "sleeping medicine," would frequently say that the sweating was less or absent. This was repeated so many times that finally the drug was tested. It was found to produce sleep, stop cough, and stop sweating. It had no disadvantages, either producing the desired result or being inert.

Chloralamid was given in one dose of 30 or 35 grains, at bedtime, either in powder or in the form of Schering's elixir.

The remedy diminished the sweating in less than one-fourth of the administrations, failed in about the same number, and succeeded in over one-half. Even in severe cases the first administration was frequently successful.

Muscarine was the least successful of all the remedies; it had no after-effects. Indeed, judging from the action of the chief members of its family, one would expect rather some favorable vascular or nervous action.

It was given in pill form at bedtime, in doses of  $\frac{1}{10}$  grain.

This remedy stopped the sweating in only twenty per cent. of the administrations, failed absolutely in forty per cent., and diminished it only slightly in the remainder.

The writer's experience with oxide of zinc showed that there was no particular idiosyncrasy required on the patient's part to produce the good results. It was also interesting to note that the element of time was not needed. It was not necessary to use it in repeated doses to produce the effect desired; in many cases the first administration would stop the sweating. But if the first few doses were not successful, the latter ones seldom were. Another feature in this drug was that, when other remedies had failed, the first dose of the oxide of zinc would be frequently successful; it had no after-effects.

It was given in pill form at bedtime in doses of  $2\frac{1}{2}$  grains.

This remedy stopped the sweating in two-thirds of the administrations; in the others it somewhat reduced it or failed entirely.

Agaricin was the most successful of all the drugs; it produced most excellent results in young subjects. Under its use the skin remained in a dry condition, without suspicion of any kind of cutaneous activity. It was very successful in cases where, during its use, the sweating had disappeared, and had returned after the drug had been discontinued for a time. Repetition did not weaken its power. Of all the remedies, it acted best in the first few administrations. Subsequent ones sometimes failed. It can be used for any length of time and has no disadvantages.

Agaricin was given in pill form,  $\frac{1}{2}$  grain; one pill at bedtime, or a pill late in the afternoon, and a second in four or five hours.

This remedy diminished the sweating in one-eighth of the administrations, stopped it in three-fourths, and failed in the remainder.

The study of cases has shown that atropine and belladonna are not the best anidrotics; they are frequently used in a routine manner; in these cases some difference in their action was noticed. Atropine is a powerful heart drug, and acts on that cardiac nerve the branches of which it is not always best to stimulate in pulmonary tuberculosis; it has after-effects. Restlessness, insomnia, disturbing dreams, and modifications of secretion were noted. Even the good effects of checked perspiration were sometimes counterbalanced by these disadvantages.

It was given in tablet or in solution, in doses of  $\frac{1}{80}$  grain or less.

This remedy diminished or stopped the

sweating in over two-thirds of the administrations.

Tincture of belladonna possesses some of the disadvantages of atropine; delirium was caused by it (idiosyncratic). The distressing symptoms of laryngeal tuberculosis were increased by it. Diarrhoea was increased where intestinal ulceration accompanied the throat lesion.

The dose used was 7 or 10 minims, commencing in the afternoon and giving two or three doses.

This remedy stopped the sweating in seventy per cent. of the administrations, diminished it in twenty per cent., and failed in ten per cent.

The above brief report deals with some of the points recorded during the treatment of the cases. The smallest possible dose was always used. At present with other remedies the same line of investigation is adopted. But with the above, if the first few administrations do not stop the sweating, another drug in the list is at once tried. Agaricin has given the best results; it must be of the purest quality.—*Brooklyn Medical Journal*, July, 1894.

#### THIOL IN ERYSIPELAS.

Following Ridder's recommendation, N. K. RUDNEFF (*Meditsinskoie Obozrenie*, No. 13, 1893) tried thiol, in the form of a twenty-to-forty-per-cent. aqueous solution, in fifteen cases of erysipelas,—fourteen of the face and one of the leg; all in soldiers. The affected regions, as well as an adjacent healthy zone (about two fingers'-breadths wide) were painted five times daily until the appearance of desquamation, and even, though less frequently, for one or two days more. As adjuvants, he employed (a) calomel, 10 grains, internally, just after admission; (b) sulphate of quinine, 10 grains twice daily (only when high fever is present); (c) camphor, 10 or 15 grains a day, internally, in the shape of emulsion (as recommended by Pirogoff). (See *Provincial Medical Journal*, February, 1891.) In three cases the disease was cut short within twenty-four hours; in eight others, treated like the preceding with a forty-per-cent. solution of thiol, the patients were practically cured in from two to four days; in four earlier cases, in which a twenty-per-cent. solution was applied, there occurred relapses, the disease permanently subsiding after a subsequent application of the stronger solution. On the whole, Rudneff is satisfied with thiol, its advantages including a complete absence of odor and of toxic and irritant properties. The disadvantages are limited to its staining linen, inducing an intense blackish

discoloration of the skin, and being rather expensive. The latter circumstance prevents a routine thiol treatment of erysipelas in hospitals. The author himself has recourse to thiol only in cases in which a corrosive-sublimate treatment (painting with a 1 to 1000 or 500 aqueous solution) fails to cut short the disease. To judge from Rudneff's sixty cases treated with the bichloride, the latter represents the most efficacious remedy for erysipelas after thiol. —*British Medical Journal*, June 30, 1894.

#### PIPERAZIN AS A URIC-ACID SOLVENT.

DR. K. BOHLAND (*Therapeutische Monatshefte*, May, 1894) has sought a patient who persistently exhibited uric acid as a sediment, in order to test upon him the solvent powers of piperazin. He found such a one in a leukæmic man, whose ratio of white to red blood-cells was as 1 to 3. His urine showed for months a persistent considerable uric-acid sediment.

Piperazin did not change the daily quantity of urine passed, but perhaps slightly lessened its acidity. The quantity of uric acid excreted in twenty-four hours remained the same during the piperazin treatment as it was during the administration of bicarbonate of potassium or when no uric-acid solvent was administered. This result agrees with those of Biesenthal and Schmidt, Levison, Dapper, and others.

Bohland reviews the whole subject at some length, and concludes that the treatment of uric-acid concretions in the kidneys and bladder, in the uric-acid diathesis, with piperazin, is entirely without favorable prospect. Existing concretions can neither be dissolved nor can their enlargement be checked by it.

#### IZAL.

N. A. BLAGOVESHCHENSKY, of Moscow (*Vratch*, No. 5, 1894), states that his experiments fully support Klein's high opinion of the antiseptic properties of izal. (See *British Medical Journal*, October 7, 1893.) A three-per-cent. aqueous emulsion destroys the cholera vibrio in fifteen minutes, and a five-per-cent. emulsion in two minutes. Eberth's typhoid bacillus is killed by a three- or five-per-cent. mixture in three minutes, while pyogenic microbes lose their vitality after a few minutes' contact with a two-per-cent. emulsion. Anthrax bacilli resist a one- to five-per-cent. mixture, but perish fairly quickly when treated with a ten-per-cent. mixture. Dressing and suture materials and hands infected with pyogenic streptococci and staphylococci can be sterilized

with izal emulsions in a satisfactory manner. The author declares that "even very strong emulsions of the substance are absolutely harmless." Referring to this paper, P. I. Diakonoff, of Moscow, points out (*Vratch*, No. 5, 1894) that commercial specimens of izal are found to vary in their chemical composition, while another disadvantage of the new disinfectant consists in its being non-transparent. —*British Medical Journal*, June 30, 1894.

#### TREATMENT OF DIABETES WITH FLUID EXTRACT OF JAMBUL E CORTICE.

DR. LENNÉ (*Therapeutische Monatshefte*, May, 1894), who had previously reported encouraging results from the use of powder prepared from the fruit of *Syzygium Jambolanum*, has now tried the fluid extract of the bark, according to the method proposed by Vix. 15 grains were given in water three times a day from one to two hours after meals.

On February 14 to 15 the patient passed 4250 cubic centimetres urine, specific gravity 1034, containing a trace of albumin; 5.1 per cent. sugar (216.75 grammes); 3.1 per cent. urea (131.75 grammes); large amount of acetic acid.

Under treatment the patient's weight increased from 43.950 kilogrammes to 45.300 kilogrammes on March 17. The volume of urine at that time was 3000 cubic centimetres; the specific gravity, 1031; the percentage of sugar, 3.6 (108 grammes); the percentage of urea, 2.6 (78 grammes). The diminution in the amount of sugar was, however, not constant, reaching as high as 5.3 per cent. on February 22, and again 4.5 per cent. on March 16. Lenné concludes justly that not the slightest influence of the agent upon metabolism can be recognized. For his part, he thinks that the fluid extract from the bark exerts just as little influence upon the sugar-excreting process of diabetes as does the powdered fruit.

#### THE INFLUENCE OF SUGAR AND TOBACCO ON MUSCULAR EFFORT.

In 1892 an important series of experiments were undertaken by DR. WARREN LOMBARD upon the influence of tobacco on muscular effort. The same subject has been investigated by DR. VAUGHAN HARLEY, and the results of his observations are recorded in the first part of the *Journal of Physiology* for the present year. Dr. Vaughan Harley agrees with Dr. Lombard in considering that the amount of work done by the same set of muscles at different times



of the day undergoes periodical variation ; so we may accept as a fact that there is a diurnal rise and fall in the power of doing voluntary muscular work, in the same way as there is a diurnal rise and fall in bodily temperature and pulse. It is remarkable, however, that instead of the greatest amount of work being done, as might have been expected, on rising in the morning after a good night's rest, it is found that at 9 A.M. the smallest amount of work is accomplished, the powers of doing muscular work in Dr. Harley's case increasing each hour up to 11 A.M. Immediately after lunch there is a marked rise, followed an hour later by a fall ; while again an hour later, or about 3 P.M., the amount of work accomplished reaches its maximum. Then, from some unexplained cause, there is a notable fall at 4 P.M., which is succeeded by a rise at 5 P.M., after which a progressive fall takes place during each successive hour until dinner. Even during a prolonged fast more work was capable of being executed from 11.30 A.M. to 4.30 P.M. than at 9 A.M. Dr. Harley admits, however, that further experiments are required to determine this point satisfactorily. It was found in his experiments on the muscles of the middle finger, that, in corroboration of a well-known physiological fact, regular exercise caused increase in the size of the muscles brought into play, and at the same time up to a certain point rendered them capable of performing more work. Sugar, taken internally, proved to be a muscular food ; since, when taken on an empty stomach, there was on that day an increase of 25.6 per cent. in the work done by the left middle finger, while the right middle finger showed an increase of no less than 32.6 per cent. Dr. Harley varied the experiment of administering sugar in many different ways, but always with the same result : the vigor of the muscles was always augmented. The influence of tobacco was not so marked in Dr. Harley's experiments as in those of Dr. Lombard. Dr. Harley considers that moderate smoking, in one accustomed to it, neither increases the amount of work nor retards the approach of fatigue. It perhaps slightly diminishes muscular power and hastens the onset of fatigue. Dr. Lombard holds that the use of tobacco has a powerful influence in this direction. Such experiments as these, even when no absolutely definite result is arrived at, are of importance, and if carried out with due precaution against error, in a large number of men, would undoubtedly constitute the most satisfactory basis on which a sound system of training should be carried out.—*Lancet*, May 12, 1894.

#### VALUE OF OPIUM IN THE LARYNGEAL STENOSES OF CHILDREN.

DR. CARL STERN (*Therapeutische Monatshefte*, May, 1894) recalls the well-known fact that the difficulty in breathing in stenosis of the larynx in children is greatly aggravated by sleeplessness and fright. For this reason he has been led to treat these cases with opium and his results have been so gratifying that he believes the remedy should receive more extensive employment. He uses it in cases—whether in diphtheria or without existing throat-affection—in which the hoarseness, the barking cough, the stridor, the cyanosis, and finally the sucking in of the xiphoid process and lateral portions of the thorax point unmistakably to stenosis of the larynx. He reports several cases in which the use of opium averted an apparently necessary tracheotomy.

Stern gives from 2 to 5 drops of the tincture of opium, according to the age of the child and the intensity of the symptoms, the dose being renewed according to the result obtained. For the most part he gives a child a year old 3 drops in a teaspoonful of sweetened water. If no result is obtained, after half an hour two drops more are given. If the symptoms become more severe, the propriety of further medication or tracheotomy must be considered.

#### A CASE OF OBSTINATE MEMBRANOUS ENTERITIS.

*La Presse Médicale* for May 19 gives the following treatment, which was successfully used in the case of a young woman : 1. Every morning an energetic general friction with a glove saturated with oil of turpentine. 2. Twice a week a hot bath in which a pound of sea salt and nine ounces and a half of sodium carbonate have been dissolved. 3. Each morning, taken slowly in a recumbent posture, an enema, as hot as possible, of nine ounces and a half of boiled water in which half a drachm of borax has been dissolved. 4. Every day, before the mid-day meal, nine grains of quinine sulphate. 5. The exclusive use of beer, milk, and Evian water.—*New York Medical Journal*, June 23, 1894.

#### A NOTE ON THE THERAPEUTICS OF DIURETIN.

MCPHEDRAN contributes the following note on this subject to the *Canadian Practitioner* of June, 1894 :

It would seem probable that diuretin is effective only within a very narrow range of morbid condition ; that when the heart has failed be-

yond a certain degree, it will not respond to the stimulus of diuretin. This seems to be true, at all events, in my own cases, in all of which its use has been temporarily more or less effective, but only temporarily; as recurrence of the dropsy and cardiac failure was little, if at all, benefited by a repetition of the drug. Diuretin is, unfortunately, a patent remedy. Its composition is known, but the process of manufacture is secret. The salicylate of theobromine and sodium is composed of the same ingredients, but is much less agreeable to take, and its effect, so far as the writer has tried, is not so satisfactory, possibly from its being less soluble. In some cases diuretin causes headache, nausea, and a feeling of depression, probably due to the salicylic acid in its composition.

In concluding, the writer states that while diuretin is not a reliable remedy, yet in suitable cases its beneficial effects are so decided as to render it worthy a trial in those distressing cases in which the heart is failing and dropsy increasing. Even if its good effects are only temporary, they are in some cases so satisfactory that the respite given amply repays its administration. Most drugs are temporary in their effects, and we do not refrain from their use on that account. It is probable that it will be found most useful in chronic diseases of the heart-muscle, with disease of the kidney, as in arterio-capillary fibrosis; less so in purely renal cases. It may sometimes prove useful also in valvular disease with ruptured compensation. In ascites from hepatic affections and in pleural effusions it will probably have no effect.

Like all patented preparations, diuretin is unnecessarily expensive, about twice the price of the salicylate of theobromine and sodium. It is to be hoped that an equally useful preparation without the patent may soon be placed within our reach.

#### CHLORALOSE.

CAPPELLETTI (*Mem. dell' Acad. delle Scienze Med. in Ferrara*, lxvi., No. 4) gives the results of experiments with chloralose. These are as follows:

*General Action.*—In frogs, small doses increase the reflex excitability. Medium doses cause diminution of voluntary movement, the power to perform which disappears after an amount varying between five and ten milligrammes has been given. In mice, a dose of 10 centigrammes per kilogramme produces exaggeration of reflexes, lessens sensibility to pain, and abolishes the power to perform voluntary movement; tonic and clonic convul-

sions are also produced. Smaller doses produce similar but less marked symptoms. In rabbits, chloralose produces first a stage of excitement, which gives place to sleep, with a diminution of voluntary movements and exaggeration of superficial reflexes. Convulsions are seen similar to those appearing in the rat. In dogs, sleep is preceded by a period of excitement, during which the animal staggers about and is insensible to his surroundings. The reflexes are exaggerated and the sense of pain is abolished. When the sleep is not profound, convulsions are a prominent symptom. In dogs, a dose of 15 centigrammes per kilogramme is enough to induce sleep. In frogs, the frequency and force of the heart-beats are not altered by small doses; with large ones the beat becomes slower and less powerful. In rabbits and dogs, the carotid pressure is not affected by small or medium doses, and it is only slightly lowered by large ones; the heart-beats also are practically unaffected; the respiration is slowed, and in the case of large doses its rhythm is somewhat altered. In rabbits and dogs, the temperature is lowered often to a marked extent.

*Action on Man.*—The action of the drug was tested only on asylum patients suffering from insomnia, the dose given at the commencement being about 3 grains. The sleep produced was, as a rule, calm and uncomplicated, the dose necessary varying according to the patient. In cases of slight insomnia 3 to 6 grains are sufficient, but in severe insomnia 12 to 18 grains may be necessary. Sleep came on in about half an hour after taking the drug, and was preceded by a period of pleasant drowsiness; hysterical patients were found particularly susceptible. The smallest doses mentioned produced a sleep of six to seven hours; large ones, on the other hand, often produced convulsive attacks, without sleep. As an hypnotic, chloralose is particularly efficacious if given in the evening.

*Action on Reflexes, Tactile Sensibility, Pulse, Respiration, and Temperature.*—During the sleep the reflexes are generally wanting, but in certain cases the contrary is seen. The appreciation of tactile and painful sensation remains unaltered, as do the pulse, respiration, and temperature. On the disease producing the insomnia, chloralose does not, as a rule, produce much effect. Some cases, however, improved markedly under its influence, but this may be merely a coincidence. In most cases the sleep is indistinguishable from physiological sleep. However, in cases in which large doses have been given, abnormal symptoms

may arise, among which may be mentioned flushing of the face, epileptiform convulsions, tremors resembling those of paralysis agitans (during the sleep), and headache, uncertainty of speech, and urticaria (after return of consciousness). Care must be taken, therefore, to give only small doses to the feeble or hysterical.

*Elimination.*—Chloralose, as such, does not appear in the urine.—*British Medical Journal*, June 9, 1894.

#### FIFTY CASES OF RECTAL SURGERY.

RICKETTS (*Mathews's Medical Quarterly*, July, 1894) gives detailed statistics concerning fifty cases of rectal surgery, and concludes from these cases that in such operations it is necessary to have the patient completely anæsthetized, and that the use of chloroform is the quickest and best means of securing this end. Cocaine is not satisfactory. This drug should, however, be given the preference in minor surgery.

As to the clamp and cautery, he relies wholly upon them in removing hemorrhoids of any size or number, it being the safest and quickest method, and so followed by speediest convalescence.

An application of the actual cautery to all ulcers and fissures at one sitting has been the most efficacious means of destroying them that he has found.

Division of fistulæ with the bistoury has not failed in any attempt to obliterate them, without in a single case destroying the function of the sphincter.

Of eight cases of ischio-rectal abscess, five occurred at the time immediately following an acute gonorrhœa. Fistulæ resulted, and were operated upon in each of the eight cases. He believes that acute gonorrhœa is the most frequent cause of ischio-rectal abscess in the male. However, an acute inflammatory process, due to any cause, is as likely to produce an abscess, the contents of which may escape into the rectum.

It is interesting to note that thirty of the cases were either tubercular or syphilitic. In the four cases of carcinoma the disease had progressed to such a degree as to render it unwise to attempt a radical operation, except towards the last, when colotomy should have been resorted to, but was refused.

Case No. 50 was unique, in that, falling from a table, a piece of ducking one and a quarter inches square was driven along the side of the rectum by a chair leg. The foreign body remained concealed for five months without de-

tection, until the writer was consulted. A portion of the sphincter was torn away, but its office remains good at the present time.

The average loss of time is but little for surgical cases of this nature.

#### TREATMENT OF SCORBUS IN INFANCY.

CARR (*Medical Record*, June 30, 1894) records an interesting case of scorbutus in an infant, in which the following treatment met with entire success:

Give at once fresh milk, beef juice, and fruits or vegetables. Orange is liked by almost all children, and is greedily devoured. When orange does not agree or is distasteful, other fruits or vegetables will do as well.

The relief of the symptoms of scorbutus is so rapid under this regimen that medicinal agents are seldom needed, except as here indicated.

Local applications of evaporating lotions to the swollen parts seem to afford relief. An opiate is useful in allaying pain and irritability and in checking severe diarrhœa. Stimulation is frequently needed to support the system. Iron is of service to combat the anæmia, but it does not hasten recovery if the dietetic management is neglected. Cod-liver oil and phosphorus are valuable in the cases where scorbutus and rachitis coexist. Sunlight, fresh air, and good hygiene are powerful aids to recovery. The fractured bones are to be treated mechanically until the antiscorbutic diet has had its effect.

#### INTERNAL HEMORRHOIDS.

DUNDORE (*Mathews's Medical Quarterly*, July, 1894), after an exhaustive paper on this subject, concludes as follows:

1. The ligature is the safest method of operating for internal hemorrhoids, as there is less likelihood of its use being followed by hemorrhage, stricture, or ulcers.

2. The clamp and cautery cause less pain, shorter convalescence, and are less likely to be followed by retention of urine than when the ligature is used; but hemorrhage and stricture of the rectum may very often follow their improper application.

3. The practice of Whitehead's method should be limited to those cases in which the entire circumference of the anus is involved. In ordinary cases of one or more hemorrhoids it should never be used, as it is liable to be followed by severe after-effects, and at best could produce no more radical result than the clamp and cautery or ligature.

4. Simple dilatation of the sphincter, in-

jection of carbolic acid, and Manley's method are simple palliatives, and their use is very limited.

5. There is no single operation which is available in all cases. Experience alone should suggest the most efficient method of treating each individual case.

#### *IDIOPATHIC TETANUS TREATED WITH SUBCUTANEOUS INJECTION OF ESERINE SULPHAS.*

In a communication to the *Indian Medical Gazette* for June, 1894, GAZDHAR reports the case of a Hindoo of the laboring class who found one morning on awakening that he was unable to open his mouth completely and that his whole body was stiff. Ascribing this to the effects of sleeping in the open air, he went to his work as usual; but he soon began to experience shocks passing through the body which rendered work impossible, and he returned to his house. The stiffness of the body increased and the spasms came at shorter intervals. Gradually the jaws became locked up completely and he could take nourishment with difficulty. The ordinary run of medicines proving ineffectual, the reporter tried hypodermic injections of eserine sulphas in  $\frac{1}{12}$ -grain doses. The effect was marvellous; for after two or three injections the tonic spasmodic condition of the body became less marked, the intervals between the clonic spasms increased, and the stiffness of the jaws lessened considerably. Within a week from the commencement of the injections the spasms had completely disappeared and the mouth could be opened to its full extent. About a dozen injections were performed in all, and the patient made a complete recovery.

#### *BLOODLESS OPERATION FOR THE EX- CISION OF HEMORRHOIDS.*

BISHOP (*Mathews's Medical Quarterly*, July, 1894) claims for the above operation harmlessly controlling the hemorrhage while excising the tumors and redundant folds of the rectum, and the perfect and undisturbed coaptation of the edges.

The following is the *modus operandi*: With a lateral or dorsal decubitus, as convenience or expediency may decide, and with an aseptic perineum and dilated sphincter, gently and smoothly clamp the base of the hemorrhoids with suitable forceps, so as to parallel the approximated surfaces and free them from folds

and adjacent healthy tissues, apply on either side a sufficient length of rubber tubing five or six millimetres in diameter, with a lumen of one millimetre, and secure with aseptic catgut after the general manner of the quilled suture. To assure accuracy of adjustment, the pieces of tubing should be of the same length and have corresponding marks six or eight millimetres apart, indicating the locations for the sutures. Each tube should have its extremities hermetically sealed by the sutures there tied, thus adding a degree of pneumatic elasticity to that possessed by the rubber. All the sutures should be preapplied or tied beforehand to one of the pieces of tubing, with threaded needles in each of the opposite loops, ready for transfixing the tissues and tying over the other piece of tubing. Remove the forceps, and excise the tumor close to the rubber tubing with flat scissors. The fixation of the tubing may be varied by using one piece doubled upon itself and drawn together with a continuous suture, made to assume an advancing figure of eight, or double spiral, by passing the needle always close to the forceps and the thread always encircling the tube from below upward; the perforations then are in one line and the tension evenly distributed. Where many stitches are to be taken it saves the time consumed in tying. This completes a bloodless operation, for the elasticity of this welted suture supplies sufficient pressure to prevent all hemorrhage, and maintains in perfect and uniform contact the margins of the wound without endangering by local asphyxial and necrotic conditions consequent on rigid clamping, and without interfering with the plastic exudation of repair by first intention.

The further dressing of the wound consists simply in passing a strip of moist borated gauze into the rectum, leaving an end protruding from the anus. The catgut sutures soften in due time and permit the tubing to pass away, while the flexibility of the latter has adapted itself to the environments with the minimum of annoyance to the patient.

#### *APPENDICITIS STRICTLY A SURGICAL LESION.*

After reporting two cases in his own practice, proving his theory, WYETH concludes a paper with the above heading, published in the *New York Medical Journal* for June 30, 1894, by the statement that, given a surgeon of experience, a clean operator, who, with the minimum of traumatism to the intestines or contiguous viscera, can remove a diseased appendix, it would be better for exploratory laparotomy

to be done in every instance within the first twenty-four hours of the disease.

On the contrary, were he himself the subject of an attack, and were he not sure of his surgeon, he would keep flat on his back, quiet peristalsis and voluntary motion with morphine, and take the chances of resolution, encapsulation by adhesion, or rupture into the intestines. If there is one particular operation an inexperienced man should in all conscience avoid, it is this.

#### DISINFECTION.

SAGE (*American Medico-Surgical Bulletin*, July 1, 1894) discusses the various methods of disinfection as follows :

Conditions of temperature and moisture are to be considered in the application of disinfectants to infectious material. A moist condition of the mass to be disinfected facilitates diffusion and allows prompt penetration by the disinfectant.

A high temperature increases the activity of chemical disinfectants, aids solution, and renders the mass permeable, and should be employed whenever the conditions will permit. Various infectious matters are best destroyed by special measures or means adapted to each individual case. Sputa and sputa cups are best disinfected by steam ; excreta and discharges may be effectually treated by milk of lime ; while water-closets, cesspools, vaults, and stables should receive a liberal application of chloride of lime.

The sick-room, when vacated, may be thoroughly purified by scrubbing the floor and wood-work with a solution of corrosive sublimate. Furniture can be wiped off with the same fluid and afterwards washed with soap and water.

In connection with the application and use of disinfectants, it is proper to review briefly the special action and deportment towards infectious material of some of the best known of the large class of disinfecting agents.

Fire is one of the best disinfectants. Unfortunately, however, its application is limited to the destruction of valueless articles in cases of extreme urgency, demanding prompt and total destruction not only of infectious matter, but also of the means or agency of its conveyance. A necessity might also exist for the use of fire, where heavy mattresses, feather and straw beds, or heavy quilts used about the sick with infectious disease are to be cleansed. Such articles are difficult to disinfect unless special apparatus is at hand to facilitate the operation. Whenever such special means are

not procurable, the only safe and proper course to pursue would be to burn the articles in question.

Superheated steam or hot air has but a limited application in disinfection. It penetrates so slowly that the exposure of many fabrics to a degree of heat and for a length of time necessary to destroy the infectious material renders them much less durable, and may even change the colors of cotton and woollen fabrics. It is also very difficult to regulate the temperature when dry heat is employed as a disinfecting agent ; but used in connection with steam, however, dry heat is very useful, increasing the effectiveness of the latter, and as the temperature increases the period of exposure of the article in the disinfector is shortened.

Moist heat, or steam, is the most reliable and useful disinfectant we have. Unlike chemical disinfectants, it cannot be neutralized, while with care and proper treatment, the most delicate fabrics can be sterilized by means of it. All articles of clothing, bedding, carpets, curtains, towels, papers, letters, and a variety of fabrics can be thoroughly and quickly disinfected by steam, the period of exposure being regulated by the bulk or size of the article and permeability of the substance. Disinfection by steam is not applicable, however, to articles of clothing or bedding soiled by blood or pus, as the stain becomes fixed.\* Articles of leather and rubber also cannot be disinfected by steam.

Corrosive sublimate is of doubtful utility. With albumin, the salts of mercury form compounds which are coagulated or precipitated upon the surface of the substances to be disinfected, forming a veneer or coating, which prevents contact of the disinfectant with the infectious material. An excess of mercury salt dissolves the albuminate of mercury, which is of itself a disinfectant of considerable power. It is necessary to use a quantity of this material greatly in excess of that really required to disinfect a mass of infectious material, and even then there would be no certainty of complete and absolute disinfection. Its use should be limited to substances of a non-albuminous character. It should never be used about instruments or articles of a metallic nature, as it attacks metallic surfaces.

As a disinfectant for the wood-work, floor, walls, and furniture of the sick-room, for carriages, hacks, and vehicles used in transporting the sick with infectious disease, there is no better agent. It should be applied in solution (1 to 500 or 1 to 1000), using a scrubbing-brush or broom.

Crude carbolic acid is a very poor disinfectant; as the quality improves, the effectiveness of the agent increases. Mixing with an equal quantity of sulphuric acid also increases its power. It has quite a wide range of utility, and is generally applicable to disinfection of sputa, dejecta, and discharges. It is used in solution of from three to five per cent.

Chloride of lime depends upon the available chlorine present for its efficacy as a disinfecting agent. It is limited to cleansing cesspools, vaults, cellars, and places of like character.

Sulphur is another agent of doubtful utility, often overestimated. It is quite settled that the action of sulphur does not penetrate to the degree formerly supposed, the evidence tending to show that it acts upon the surface only. It has but a limited application in or about the sick-room.

Calcium hydroxide, in the form of milk of lime, is another disinfecting agent which is very useful among chemical agents. Its range of utility exceeds all other disinfectants; all micro-organisms are destroyed by it, whether applied to walls as whitewash or mixed with the infectious material. It is more generally applicable as milk of lime, which consists of recently-slaked lime mixed with four parts of water. In this form it can be used to disinfect excreta, discharges in sputa cups, and, if desired, can be applied to walls or used to disinfect the contents of cesspools and vaults. It always should be added to the point of marked alkaline reaction, the alkalinity determined by testing with litmus, the use of litmus being necessary on account of the varying quality of the lime due to age and many impurities in the lime. Unslaked lime should never be added to infectious material, as the action is so slow that the mass is not entirely disinfected, as the lime, slaked and neutralized, is not diffused throughout the mass until it has lost its power as a disinfectant.

#### VAGINAL HYSTERECTOMY WITHOUT CLAMPS OR LIGATURES.

"The assertion that vaginal hysterectomy may be so performed as to make the operation almost a minor one may strike the average surgeon as a strange one, and false; but it is a true statement," says LANPHEAR (*Kansas City Medical Index*, June, 1894). The method he considers the ideal one for small intramural fibroids, procidentia, and for early cancer of the cervix. For far-advanced epithelioma, causing symptoms sufficiently severe to de-

mand operative interference, it cannot be advised, nor can it be employed in tumors too large to be delivered through the vagina, nor in cases in which pyosalpinx is a complication. He bases these statements on four successful cases performed by himself, and thus endorses Pratt's conclusions:

1. The loss of blood is trifling, and as the vessels are not injured, they remain to repair the wounded parts, which they do with rapidity and completeness.

2. Diseased tissue is not disturbed, the uterus not being mutilated nor even wounded, the entire organ being removed intact.

3. If by accident a blood-vessel is cut, it is so perfectly in the field of operation that it can be readily secured by forceps and tied without injury to neighboring nerve-fibres.

4. There is no pinching of the sympathetic and spinal nerve-fibres by clamp or ligature, consequently there is no "shock" following operation.

5. When necessary the tubes and ovaries can be removed with no loss of blood and the peritoneal opening closed as perfectly as in coeliotomy, preventing hernia and leakage of discharges into the pelvis.

6. The operation seems almost devoid of shock or danger to the patient, practically converting a major operation into a minor one.

7. It possesses none of the bad features of vaginal hysterectomy by the clamp or ligatures,—viz., high death-rate, slow convalescence, and disturbances due to pressure.

8. There is scarcely any pain and very little soreness after the operation, the reaction and healing are rapid, the freshness and buoyancy of the patients are restored to them, and their natures, instead of being changed for the worse, are radically improved.

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#### THE VALUE OF INOCULATIONS WITH SEPTIC OR TOXIC AGENTS IN THE TREATMENT OF MALIGNANT NEOPLASMS.

WYETH (*Journal of the American Medical Association*, June 30, 1894) presented a paper before the Forty-fifth Annual Meeting of the American Medical Association with the above title, in which he reaches the following conclusions:

1. Sarcoma may be cured by septic infection. The sepsis of erysipelas exercises the most powerful curative influence. Infection from the streptococcus pyogenes aureus will also cure sarcoma. The injection of the sterile products

of Fehleisen's coccus will also cause these neoplasms to disappear.

2. These agents act through the blood. Thus, erysipelas attacking a breaking-down sarcoma of the back, caused this to disappear simultaneously with a similar growth in another portion of the body of the same patient not locally infected. It is probably better to inoculate in the mass and get the local action of the inflammatory process when this is possible.

3. The lower the order of the structure of the sarcoma the less likelihood of a successful result. Thus, in tumors of a myxomatous character the prognosis is less favorable.

4. Epitheliomata may also be made to disappear or their growth may be retarded by septic infection.

5. Adenoid carcinomata are only slightly, if at all, susceptible to cure or retardation in growth by these agents.

#### AN EFFICACIOUS METHOD OF TREATING URETHRITIS.

LEWIS (*Kansas City Medical Index*, June, 1894), after calling attention to the anatomy of the urethra, states his belief that in ninety cases of a hundred of gonorrhœa it is necessary to treat the posterior urethra. In the treatment of this he employs, as a rule, the catheter and bulb for zinc sulphate irrigation and the deep urethral syringe for argentic nitrate injections. Solutions of graded strength of each of these remedies are used after fairly well prescribed rules.

After the acute symptoms have been subdued by time or judicious treatment,—that is, in the condition shown by most cases of chronic urethritis,—the method of treatment is inaugurated with the use of the milder of the two remedies,—an irrigation of zinc sulphate in the strength of one-twentieth per cent. The patient having first urinated, with glycerin lubrication a small, soft-rubber catheter (No. 12 French) is introduced into the urethra until its eye is placed proximal to the cut-off muscle,—i.e., within the posterior urethra; the bulb syringe, holding eight ounces of the solution, is applied to the distal end of the catheter, and three-fourths of its contents are injected into the posterior urethra, whose membrane is thus thoroughly bathed with the solution as it runs back into the bladder. The catheter is then withdrawn for an inch or two till its eye is external to the cut-off muscle, whereupon the remaining fourth is injected, running forward alongside the catheter, irrigating the anterior urethra. Thus, both the anterior and posterior

urethra have been thoroughly irrigated. The patient is told to stand up and pass out what has been injected into his bladder, and in so doing he accomplishes another irrigation of his entire urethra. Slight burning follows the irrigation. A day later the irrigation is repeated; two days after that another repetition, but with added strength, say one-eighth per cent.; two days later, one-fourth per cent.; and so on until two and one-half per cent. is reached, when usually the discharge at first present has disappeared and the high degree of tenderness is relieved. The second of the two series of treatments should then be instituted,—deep injections of silver nitrate.

After filling an Ultzmann syringe with a one-fourth-per-cent. solution of nitrate of silver, the catheter stem is lubricated with glycerin and introduced until its inner end has reached the deep urethra. The piston is now depressed at the same time that the syringe is being withdrawn, spreading the solution over the entire urethral tract. This awakens some transient reaction, such as desire to urinate. It is well, therefore, to have the patient sit down for a while till this passes off.

This treatment is repeated every other day for a time, with progressively increasing strength of solutions; usually it will not be found necessary to go above three per cent. With improvement the urethra tolerates the stronger solutions readily. With the disappearance of pus and shreds from the urine the patient may be considered cured. It will be found, however, that a few shreds will be apt to show in the first portion occasionally, long after it is justifiable to discontinue treatment. If the shreds are composed mainly of mucus, with only a few pus-corpuscles, they need not be regarded as indicating continuation of active measures.

If tuberculous infection be present the method is directly contraindicated.

#### CONTROL OF HEMORRHAGE IN SHOULDER AMPUTATIONS.

KEEN (*American Journal of the Medical Sciences*, June, 1894), in discussing this topic, first considers disarticulation of the shoulder. The control of hemorrhage in this operation is best accomplished by the use of Wyeth's pins. The patient is brought to the edge of the table with the shoulder projecting somewhat beyond the edge. The arm is held at a right angle to the body. Two sharp-pointed cylindrical pins eleven inches long and one-quarter of an inch in diameter near the head

(No. 20 French catheter scale) are used. A good deal of force is required to push the pins through the tissues, and the suggestion is made that the point be made triangular, like that of a trocar, to facilitate introduction. The anterior pin is introduced through the middle of the anterior axillary fold (tendon of the pectoralis major) at a point a little nearer to the body than what may be called the centre of the fold transversely. The point of emergence of the pin is of much greater importance than the point of insertion; this should be an inch within the tip of the acromion. The pin being pushed through, the point is protected by a sterilized cork. The second pin is now introduced at a corresponding point through the posterior axillary fold (tendon of latissimus dorsi), emerging again an inch within the tip of the acromion. Some little care is needed to avoid striking the spine of the scapula. The exact point of emergence is important, in order to avoid the precise objection which Treves adduces,—namely, that if the pin emerges near or at the tip of the acromion, the moment the head of the humerus is removed the tubing is apt to slip downward, compress the two flaps against each other, and thus hide the cavity formerly occupied by the head of the humerus.

The pins being placed in position, a piece of black rubber tubing half an inch in diameter is then wound tightly around the axilla and shoulder on the hither side of the pins. It is important that this tubing should be the pure black rubber, which is very elastic, and not the far less elastic white rubber tubing. The disarticulation having been effected, the main vessels and all visible smaller vessels are tied and the tubing quickly removed. All other spurting vessels are then seized with hæmostatic forceps. The pins are not removed by Keen until after seizing the vessels, so little have they been in his way. The punctures made by the pins heal quickly and are absolutely of no importance.

In amputation of the shoulder-joint, in cases where the axilla is involved so high that the pins cannot be employed, Keen advocates Delpech's method.

When it is necessary to remove the arm, the scapula, and the clavicle, the method advocated by Berger is endorsed. The steps of the operation are described as follows: "An oblique incision extending from the external third of the clavicle to an inch above the inferior border of the great pectoral muscle. We thus discover and can cut, near to its origin on the coracoid process of the scapula, the lesser pectoral. The index finger is then carried through

the cellular tissue along the serratus magnus muscle, then the subscapular muscle, and is used as a hook in order to draw outward the mass of vessels and nerves. The artery is always situated at the anterior part of the mass, is surrounded and, as it were, indicated by the two roots of the median nerve, and nothing is easier than to surround it with a ligature which will embrace nothing else. This process appears preferable in that it produces but little injury to the parts, that it leaves a certain space between the ligature and the trunk, and permits temporary compression of the subclavian artery above the clavicle on the first rib."

#### SURGERY OF THE SPINAL CORD.

THORBURN (*British Medical Journal*, June 23, 1894), in a series of lectures delivered on this subject, states that the mortality of laminectomy after injuries is about sixty-seven per cent., as against eighty per cent. for the untreated cases. The operations for tuberculosis give better results. Thus, of seventy cases performed by seven operators, there were but twelve deaths due to or hastened by operation, giving a percentage mortality of 17.1; therefore the writer holds that the dangers of the operation are not great, especially in view of the conditions which it is intended to relieve. The fatal issue is usually due to shock. In a collection of thirty-eight cases of penetrating wounds of the spinal cord, there were fifteen deaths, nine due to septic infection, usually taking the form of a rapidly-spreading meningitis. It is held that in case of suspected injuries of the cord, which are liable to be septic, the wound should be left open, thus allowing of the escape of such discharges as may form. The question of recovery of function after penetrating wounds is one of extreme importance. In twenty-one cases the opportunity for recovery of structure and of function was the best possible. There could have been no great separation of the cut surfaces; there was no septic infection. In spite of these most favorable conditions, complete recovery of function occurred in three cases only. Of the numerous cases with permanent symptoms, very few showed any amelioration of the earliest condition. The conclusion from this seems clear that in man we cannot hope for anatomical recovery; that vicarious conduction may allow of restoration of function to some extent, but that in the case of complete transverse lesions, in which vicarious conduction is manifestly impossible, no recovery whatever will take place. This conclusion by no means applies to nerve-



roots after they have left the structure of the cord. Indeed, we may confidently anticipate recovery of the nerve-roots when divided within the vertebral canal. In compound fractures, which are chiefly gunshot wounds, all splinters and foreign bodies should be removed. Fracture of the spinous process, when brought about by direct blow, when the bone is sunk below its normal level, would also call for operation.

In fractures of the laminae, operation is indicated if there are symptoms of pressure upon the cord. There is here no reason to anticipate a rebound of the bony fragment. There is also a reasonable probability that the medullary lesion is not a complete crush. Finally, the operation itself is the simplest. Of three recorded operations, two were completely successful.

In fracture dislocations of the bodies of the vertebrae, displacement is almost always forward and downward. In association with these lesions it is probably not very rare to meet with diastases,—that is to say, with dislocations in which the displaced bones have recoiled, so as to leave no permanent disturbance of the relations. Nevertheless, the cord may be very seriously injured. The fractures are usually oblique, from behind and above downward and forward. The distinction between a crush, followed by recoil of the bones in the proper position, or a similar injury associated with a temporary compression, is one which is extremely difficult to make. The asymmetry or deformity may sometimes aid in forming an opinion. In two instances there have been obtained excellent results in operation for hemorrhage into the spinal canal, in both cases the clot being removed by laminectomies. In one case this operation was not performed for three months after the injury, when there was removed a firm fibrous tissue, which had formed in the clot. There is one unusual lesion which can be recognized; this may be called gravitating hemorrhage, which makes its presence known by paralysis extending upward. Operation at the site of injury would be indicated in such a case. The author holds that, for all practical purposes, we have three varieties of injury which call for treatment,—namely, permanent pressure upon the cord, temporary crushing of the cord, and hemorrhage. The latter is so rare and so little likely to be diagnosed that we are almost justified in neglecting it. As regards the two former, it is clear that in cases of temporary compression—which constitute the majority—laminectomy is necessarily useless. The crush is over, the cord has already sustained its maximum of injury, and it lies in the best possible position for re-

covery, if such be possible. In cases of permanent compression, on the other hand, we may certainly restore the normal lumen of the vertebral canal, but we can hardly hope to do much, if any, good to our patient; in the first place, because, as we have already seen, the injured cord will not be capable of regeneration; and, in the second place, because the extreme mortality—or, at least, persistency of symptoms—in the cases of temporary compression is such that we can hardly hope for benefit in the more severe cases in which the compression has been permanent.

Finally, he concludes, in compound fractures, operate. In fractures of the spinous processes and laminae, with injury to the cord, we also operate. In simple fractures and dislocations of the bodies of the vertebrae, if there is a reasonable probability that the injury is due to hemorrhage, operation is advisable; but in all other cases, however, laminectomy is not an eminently valuable surgical procedure.

#### PREScriptions.

The following application is recommended in ichthyosis and chronic eczema:

R Papain,  $\text{gii}$ ;  
Acidi salicylici,  $\text{zi}$ ;  
Glycerini,  
Ol. ricini, of each,  $\text{ziv}$ . M.

Sig.—Apply, with friction, to the surface of the body.

Antipruritic oil:

R Acidi carbolici,  $\text{zi}$  to  $\text{gii}$ ;  
Liquor potass.,  $\text{zi}$ ;  
Ol. lini.,  $\text{zi}$ .

M. et adde ol. bergamot, q. s.

Sig.—Shake before using.

—*British Journal of Dermatology*, July, 1894.

#### RUPTURED INTESTINE FROM ACCIDENT; LAPAROTOMY; SUTURE OF GUT; RECOVERY.

THOMAS (*British Medical Journal*, June 23, 1894) was called to see a patient, aged fifty-five, who twenty-four hours before had received a blow upon the abdomen which had caused vomiting and persistent pain. On admission, the pulse was 80 and strong; the patient was able to walk. Operation was performed immediately, and an incision through the belly-wall evacuated upward of a pint of putrid serum; a thorough search showed a perforation of the ileum, from which liquid faecal matter was oozing. This rupture was closed by a double row of Lembert sutures. The abdominal cavity

was thoroughly irrigated with 1 to 100 carbolic lotion, and a drainage-tube inserted and the belly-wound closed. Recovery was uninterrupted.

#### PEAT WOOL IN SURGERY.

For many years there has been a gradually growing demand on the Continent for peat in a coarse powder for use as an absorbent and deodorant of excreta, for by its use the dry system of sewage removal, obtaining so largely abroad, was found to be deprived of the various and obvious objections thereto. The reason of its growth in favor for this purpose was found to be its power of absorbing liquids (nine times its own weight of water), of causing the liquids which it has absorbed to be resistant to putrefaction, and of fixing and preserving the ammoniacal products present in sewage. The two former of these properties soon attracted the attention of the surgical world abroad, a monograph being written on the subject ten years ago in Germany. BURGESS (*Lancet*, July 21, 1894) states that more recently the invention of processes for extracting the fibre from dust and *débris*, and the discovery of the fact that these fibres will form a wool of a firm, elastic nature, have given a great impetus to the use of peat in surgery. So great has been the favor this product has gained abroad that the French War Department has now definitely adopted it to replace the gauzes and wools which have been hitherto used in the military hospitals. Peat fibre, as now prepared for surgical purposes, is a fine, brown, glossy wool, with a faint aromatic smell. It feels a little rougher than fine absorbent wool, but makes a more comfortable dressing, as it is much more elastic. Microscopically, one would, of course, expect to find the more resistant portions of vegetable tissues in a dry and shrivelled condition. Various different observers have described different forms of cells in peat. One especially draws attention to cells provided with stomata, through which the fluids flow in and fill the empty cell cavity when the fibre is immersed. In the samples examined by the writer the microscopic structure was exceedingly simple. The fibres were macerated in a solution of potassium, teased out, and examined with a one-eighth-inch objective. It was found that they consisted almost entirely of very long and very narrow cells, with finely tapering ends. The fine peat fibres consisted of bundles of from fifty to one hundred of these cells, which were from one-fifth to one-fourth the diameter of fine cotton fibres. They were per-

fectly homogeneous and glassy; they had a minute cell cavity, which appeared as a fine dark line, with no trace whatever of stomata. Besides these, every here and there was a much broader cell, with transverse marking, resembling the peculiar vessels of plants, and there were a few polygonal vegetable cells adherent to these. The most striking points were the small size of the fibres, their great length, transparent, homogeneous structure, and regular grouping.

With regard to the reputed antiseptic qualities of peat, careful investigation has quite settled the fact that peat contains a substance which does definitely retard the development of micro-organisms. This substance or substances can be extracted by steeping the peat in water, and is of a faint acid reaction, but its exact composition has not been worked out. There is, however, some power of preventing putrefaction present in peat greater than is accounted for by the possession of this substance, and it is surmised that it is the fact of the absorbed fluids being actually taken into the empty cells, and held there out of contact with air, that to some extent accounts for this. No claim is made for its being in any sense a bactericide, but even the above retarding effect upon germ growth is a power not possessed by any other dressing material of itself. If a stronger antiseptic be needed, peat, described above, can be most effectively, on account of its arrangement of fibres, impregnated with perchloride of mercury or any other antiseptic.

LUCAS-CHAMPIONNIÈRE gives a graphic account of the comfort experienced in cases of extravasation of urine necessitating free incisions after dispensing with ordinary dressings and packing with peat wool. The same writer goes on to describe numerous major operations where, even with much oozing, one single peat dressing was kept on until the wound had united. In the writer's own experience, in one case of cellular erysipelas, involving the entire leg and obliging numerous long and deep incisions, peat wool was entirely employed and fully justified its reputation. To recent and clean wounds a layer of perchloride gauze was first applied and then a pad of peat wool, and in no case was more than one dressing needed. For padding splints nothing better can be imagined; one gets an elastic pad which has no tendency to felt and which does not get sour and ill smelling, however badly it is treated.

With regard to its disadvantages, there are two: first, a tendency for the finer fibres to break if handled much, by which a little dust

is produced, and for this reason it is not recommended as an immediate application to operation wounds. The other disadvantage is its brown color; but in actual practice neither of these forms any noticeable drawback to its usefulness.

#### *MALIGNANT INDIAN SYPHILIS TREATED WITH THYROID EXTRACT.*

MENZIES (*British Medical Journal*, July 7, 1894) reports four cases of this disease in which thyroid extract was used with most gratifying results. The patients were all invalids, lying in the military hospital, having been sent down from their respective stations for change to England. They were all in a very weak, sickly state, the disease being complicated by malarial fever, bowel complaints, etc. All mercurial and alterative treatment was suspended for the time, in order to watch the effect of the remedy.

No recurrence of the eruption took place: Old cicatrices took on a healthy action and the pigmentation in a great degree disappeared. He particularly draws attention to the following considerations: 1. The exceptional virulence of the poison. 2. The undeniable value of thyroid extract given alone, without any mercurial preparations. 3. The hygroscopic and absorbent properties of the powdered extract. He found it useful for insufflation and dusting purposes. "Tabloids" are very susceptible to moisture. Three other cases came under his notice: (a) rupial ulcers of face and arms; (b) ozæna, with ulceration of nasal passages; (c) hereditary syphilitic patient with a broken-down gumma of calf. These men also decidedly progressed under the new treatment. He regards the remedy as a powerful skin tonic and adjuvant to the mercurial and alterative treatment of syphilis.

#### *RECURRENT APPENDICITIS.*

MAYO ROBSON (*Lancet*, June 30, 1894) reports eight cases of recurrent appendicitis in detail, and as a result expresses the following beliefs:

In the cases reported—characteristic ones, where the operation was performed between the attacks—there are three courses which may be pursued: 1. Non-operative, trusting to rest and diet, with opium, if required, in order to bring about resolution, in the hope that the existing attack may be the last. 2. Operation on the second or third day of a seizure, as advised by American surgeons, who discourage the removal of the appendix between the

attacks, on the chance that there may be no recurrence. 3. Operation in the quiescent period between the attacks, (a) because the patient is likely to be in the best possible condition; (b) because there is less likelihood of there being an extensive collection of inflammatory products in or in the neighborhood of the appendix, and therefore there will be less danger of soiling the general peritoneal cavity and less fear of peritonitis; (c) an operation in the quiescent period seldom requires drainage, and therefore the wound can be made secure, and there will be less likelihood of hernia following operation; and (d) the appendix can be dealt with in a more satisfactory manner than when it is acutely inflamed and hidden by greatly distended intestines. In deciding on the line of treatment, whether medical or surgical, the patient should have matters fully explained to him, the dangers of recurring attacks, with the sufferings and inconveniences, being balanced against the risk of operative interference and the results gained by operation; therefore, in all these cases Robson urges the co-operation of physician and surgeon, so that, if possible, the opinion given may be free from bias. Can these several risks be estimated? Fitz gives the mortality of perityphlitis medically treated as eleven per cent.; this is probably too high for attacks of recurrent appendicitis, but who is to say that in any case the next seizure may not end in perforation and death? What are the inconveniences? In all the cases related, incapacity for the ordinary pursuits of life and practically invalidism were marked features. What is the likelihood of recurrence? In the cases related there seemed to be every probability of the recurrences being repeated indefinitely, and it is probable that if any case suffers from two or three attacks, there is a strong probability of many more attacks until some complication supervenes.

What are the risks of operation in the quiescent period? Here we stand on more certain ground, for published statistics prove the dangers to be very slight in the hands of those accustomed to such operations,—not more than two or three per cent. And, lastly, What are the results which may be looked forward to after recovery from operation? In such cases as have been reported, and in the writer's now mentioned, the patients have been apparently completely cured.

Although the author does not agree with those surgeons who argue that every case of recurrent appendicitis should be operated on, he believes that in recurrent appendicitis operation should be resorted to as soon as it be-

comes evident that there is a probability of the attack being repeated, especially as the operation is one that can be undertaken in the quiescent period with every prospect of immediate and ultimate success.

#### THE USE OF ACETANILIDE IN SURGERY.

WOODS (*Journal of the American Medical Association*, July 21, 1894) has used acetanilide in twenty cases of operative wound and laceration. He finds it an admirable and curative application to internal hemorrhoids, and a satisfactory dressing in the form of a suppository after their removal by the Paquelin cautery. He recommends it as an injection in gonorrhoea, using,—

R Acetanilide, ʒi;  
Alcohol, ʒss;  
Aque, ad ʒviii.

Salol is administered along with this. The same injection may be used for the treatment of sinuses. In one case physiological symptoms of absorption of the drug became manifest, an unknown quantity of the medicament having been dusted over an extensive scald.

The advantages claimed for acetanilide are that it is cleanly, odorless, antiseptic, desiccant, hæmostatic, stimulant, alterative, non-toxic practically, lasting in its effects if intermitted, does not crust, is easily removed, and that it acts in these ways when perfect cleansing of a wound is impracticable, while it is a perfect substitute for iodoform at an insignificant cost, and is not injured or altered by moisture, as it may be saturated with water and, being drained and dried, is found to be unaltered.

#### TREATMENT OF STONE IMPACTED IN THE URETER.

Under this title, COTTRELL (*Lancet*, June 30, 1894) lays down the following treatment: It is very important in cases of renal colic to find out whether the stone has passed into the bladder or whether it has been arrested during its course. It has so frequently happened that an impacted stone becomes more or less quiescent, the condition causing atrophy of the corresponding kidney, and this condition has not been known or suspected until mischief on the opposite side has led to suppression of urine. Where, therefore, there is a history of severe renal colic of an intermittent character, combined with tenderness at one spot, the whole symptoms abating after a time without any evidence of a stone being passed

down into the bladder, impaction must be most strongly suspected. If combined with symptoms pointing to the formation of a hydronephrosis, the diagnosis becomes a certainty.

This is one of that class of cases where the ureter should be explored and the stone, if found, extracted. The patient should be urged to submit to this treatment, and the consequences if he neglects to notice the danger signal should be clearly put before him. In another class of cases we are called upon to operate for hydronephrosis or for pyonephrosis, resulting from impacted stone. If there is reason to suspect that a fair amount of working kidney has escaped the disorganization, it may be worth while to search for and remove the impacted stone before proceeding to more radical measures.

If we are called upon to operate upon a case where suppression of urine has come on, the treatment will be best discussed under two heads: (1) where the symptoms of uræmic poisoning are not well marked; (2) where the uræmia is well pronounced. In cases coming under the first heading, we must be certain, if possible, which is the side affected with calculus, and the history of the case will help to guide us in this matter. Having decided upon which side the impaction has probably occurred, the ureter should be thoroughly explored, and if a stone is found it should be removed. If no stone is found, it will be good surgery to cut down upon the kidney and put a drainage-tube in the pelvis, which will probably prevent the patient dying from uræmia. Under the second heading, where uræmia has supervened and its symptoms are well marked, it is certainly not good treatment to search for an impacted calculus. In a case of this kind we should be content to make an opening into the kidney and drain off the urine. It might happen that, owing to want of a careful history of the case and in the absence of subjective symptoms, an atrophied kidney is opened, or that organ may be absent on the side operated upon. Should the surgeon come across either of these conditions, the best thing to be done is to turn the patient over at once and to operate upon the other side.

If the drainage of the kidney relieves the uræmia, a search should be made for the stone when the dangerous symptoms have subsided.

When a stone is impacted in the upper part of the ureter, the symptoms are so like those of stone in the kidney that the two conditions have always been confounded, and the diagnosis of impacted stone has only been made after a nephrotomy has been performed. If a pa-

tient has symptoms of stone in the kidney, and a very careful exploration fails to reveal the calculus, the upper part of the ureter should be explored, the nephrotomy wound being somewhat enlarged, if necessary, for this purpose. If not found, a soft bougie might be passed down the tube and an endeavor made to locate the calculus, and if this is successful the stone can be easily removed.

Mr. Godlee reports a case in which he successfully pushed the stone on to the bladder by an œsophageal bougie. The author condemns this treatment as a routine practice, pointing out that there is no evidence at all to point out the size of the stone, and the symptoms may be quite as severe where the calculus is small as where it is too large to be pushed through the mouth of the ureter. Further, if ulceration of the ureteral wall has taken place from pressure, it would be very easy to push the stone and bougie out of, instead of down, the ureter. The middle three-fifths of the ureter can be very conveniently exposed and explored by an operation similar to that which is laid down in the text-books for ligature of the common iliac artery. As is well known, when the peritoneum is stripped up it always carries the ureter forward with it, and advantage can be taken of this fact. Having found the ureter, it may be explored between the finger and thumb nearly to its lower end. Should a calculus be found low down and not in a position where extraction is easy, it is desirable to work it up to opposite the wound with the thumb and finger, and then extract it. The lower end of the ureter may be explored in the female through the vagina and in the male through the rectum. The removal of stones from the lower end may be accomplished very easily in the female by cutting down upon them through the roof of the vagina. Where they project into the bladder, Mr. Morris advises that the ureteral opening of the bladder should be enlarged by cutting and the stone extracted by forceps. This operation might be effective where but one stone existed, but where there are several, as is generally the case, the manipulations necessary in removing the stones by forceps might possibly open the peritoneum, the only case in which this method was employed having terminated fatally because of this accident. Finally, in operation for impacted stone at the lower end of the ureter in the male, the writer advocates a perineal operation, dissecting down between the urethra and the rectum until the base of the bladder is exposed. Advantage may be taken of the thickness and of the expansile property possessed by

the wall of the ureter. If the calculus is thoroughly squeezed between the thumb and forefinger, the wall of the ureter being stretched tightly over it, a longitudinal incision will, after the removal of the stone, so contract that in many cases its site cannot be afterwards discovered, except by a very careful search. The ureter should not be sutured.

#### PUNCTURED WOUNDS OF THE LIVER.

Under the above heading, R. ROMME (*La Tribune Médicale*, July 5, 1894) reviews this class of injuries, especially referring to the cause of President Carnot's death.

In the five hundred and forty-three cases of traumatic diseases of the liver collected by Edler, sixty-five were produced by cutting or pointed instruments. Of this number, twenty-three recovered and forty-two died. The cause of death in thirteen cases was from hemorrhage and in twelve from peritonitis. Shock was present in a great majority of cases. Pain was not so common a symptom, nor was jaundice a constant sequel. Bilious vomiting, however, was very frequent, as were also respiratory troubles, as cough and dyspnoea.

The principal symptoms—traumatic shock with collapse, local and radiating pains, nausea, vomiting, and respiratory disturbances—were all present in the case of M. Carnot. We quote the report given at the time:

"At the moment of the accident the President carried his hand to his breast, saying, 'I am wounded,' and with that he lost consciousness. He was laid down in the carriage, with the head thrown back. His face was very pale, and his eyelids, half closed, gave the impression of impending death. During the time required to transfer him to the préfecture he suffered from nausea two or three times, but did not vomit. Under the first incisions of the operation he regained consciousness, responding distinctly to the questions concerning his sufferings, the face remaining always pale and his strength gradually sinking. Later he complained of dyspnoea, followed by some convulsive movements, and soon afterwards died. As internal hemorrhage was suspected, ice compresses were applied to the abdomen while preparations were being made for the operation. Upon the arrival of instruments, without administering an anæsthetic, an incision twelve to fourteen centimetres long was made in the abdominal walls, allowing the escape of considerable blood. The lips of the incision were picked up by hæmostats, allowing better exploration. A puncture of the liver to the depth of two to three centimetres was

discovered; this was enlarged and packed with gauze. Before the operation could be concluded, however, the President suddenly experienced great agony, and with a convulsive movement, which caused extrusion of the intestines through the parietal incision, passed away. The autopsy showed a wound of the left lobe of the liver twelve to thirteen centimetres deep, opening the portal vein in two places, and causing death from intraperitoneal hemorrhage."

From the experience gained in this case, the author would recommend early exploratory laparotomy in penetrating injuries of the liver.

#### HALLUX RIGIDUS.

COLLIER (*Lancet*, June 30, 1894) gives some valuable points on the stiff and painful condition of the metatarso-phalangeal joint of the great toe, usually consequent on and associated with flat-foot, and, like flat-foot, not necessarily confined to one foot, but more often, sooner or later, affecting the same joint of the opposite foot. The victims of this disorder are usually young persons at or about puberty. Males would appear to be more often affected than females, doubtless due to the fact that young males are more frequently employed in arduous work, necessitating more standing and the carrying of heavier weights than females. This affection is not necessarily associated with any permanent constitutional ailment or tendency, unless it be a want of vascular and muscular tone and some impairment of nutrition. The affected foot presents a peculiar and characteristic appearance. In the first place, it is an abnormally long foot for the size of its owner. Next, the foot is nearly always cold, damp, and more or less blue, the tone of its vessels, as well as its nutrition, being apparently impaired. The distortion of the foot is characteristic and peculiar, and is due to the fact that any pressure between the head of the metatarsal bone and the sesamoid bones on the tendons of the short flexor cannot be tolerated. The metatarsal bone is flexed on the tarsus and is adducted to the midline from its fellows. With this the proximal phalanx is slightly flexed. The head of the metatarsal bone appears through the skin to be enlarged, and there is found sometimes some lipping of the cartilage of this bone at its under and lower aspect, in the neighborhood of the sesamoid cartilages. In early cases pain is not usually complained of until the end of the day, and then mostly after long standing or much walking; but as the disease progresses, the pain is

continuous, except when the patient is not standing and at night. The joint is never red, painful, or tender to the touch, except on manipulation, and gives no indication of containing fluid or of being the seat of acute disease. Flexion of the joint is generally readily permitted, but any attempt at an extension elicits opposition and evidence of acute pain on the part of the patient.

The author has diagnosed, treated, and subsequently operated on nine cases,—two females and seven males,—and in all but two the subjects were young adults between sixteen and twenty years of age. In all the disease was associated with flat-foot, cold feet, and impaired nutrition. After a preliminary trial of tonics, frictions, and appropriate boots, all were operated on, and the head of the metatarsal bone removed. The joints healed by first intention, and a movable and useful joint resulted.

#### ILEO-COLOSTOMY, AFTER SENN'S METHOD, IN WHICH PLATES WERE MADE FROM THE TURNIP-CABBAGE.

BOROCZ (*Centralblatt für Chirurgie*, July 7, 1894) successfully performed ileo-colostomy by using fresh cabbage-turnip plates.

A young man, aged nineteen, presented himself with a tumor in the cæcal region the size of a hen's egg, and from the history chronic inflammation of the cæcum with adhesive peritonitis was diagnosed. As the enlargement was causing obstructive symptoms and impairing the general health, its removal was attempted. Upon examination, the enlargement was found in the cæcum, into which the ileum had become invaginated and grown fast. Two clamps were applied to the intestines; the ileum and then the colon were severed, invaginated, and closed by sutures. The tumor was then attacked, but so many adhesions presented that it was finally left *in situ*, and the union of the two intestinal ends by lateral anastomosis was proceeded with. Two plates of the cabbage-turnip (Kohlrüben) were used, resembling Senn's decalcified bone-plates, each having a central opening of three centimetres; these plates should be freshly prepared.

The threaded plates were applied as Senn has instructed, with the addition of the Kürchner suture on the lower side previous to fastening the plates, whereby the serous membranes were united at this point. After the union of the four principal ligatures, the operation was completed by continuing the Kürchner suture on the remaining side and two ends. The opera-

tion point was then covered by the great omentum and the peritoneal cavity cleansed with sterile gauze.

At the end of the operation, which lasted two hours, the patient was in a state of collapse and his pulse was 120 per minute; but prompt treatment was given, and his improvement was prompt. On the third day the plates passed. Eleven months after operation the patient was in normal condition, without any trace of the enlarged cæcum to be found.

#### A CASE OF CUT-THROAT.

HISLOP (*Lancet*, June 30, 1894) reports an interesting case, as follows: On April 13 he was called into the country to see a man, seventy-four years of age, who had cut his throat. On reaching the patient, he found him sitting, supported by two people, on a night-chair, with a huge, gaping, and slightly lacerated wound of the neck, extending to within half an inch of the carotids on either side. The trachea was all but completely severed, the band that was left being certainly not more than a quarter of an inch wide. The man had evidently lost a great deal of blood; he was pulseless and in a state of collapse. After tying four arteries, from which the blood was still coming freely, Hislop brought the ends of the trachea together with four strong silk sutures, washed the big cavity of the wound out with cold spring water, and brought the surfaces together with ten interrupted silk sutures. The wound was dressed with a thick pad of dry lint and surrounded with cotton wool. By this time the man had completely recovered consciousness, and was able to speak freely and without pain. Recovery followed uninterruptedly and was completed May 28.

#### GLYCERIN INJECTIONS AS AN OXYTOCIC.

PELZER (*Centralbl. f. Gynäk.*, No. 26, 1894) read a communication on this subject at a recent meeting of the Cologne Obstetrical Society. He had collected twenty-eight cases, including nineteen in his own experience. Glycerin was used eighteen times for induction of premature labor; in fifteen of these cases the pelvis was narrowed, in two there was Bright's disease, and in one placenta prævia. To stimulate uterine action at term, glycerin was injected in seven cases of simple atony, in two of placenta prævia, and in one for some other complication. The pains came on after an average interval of two hours following the

injection. Eight to ten hours elapsed before complete dilatation of the os, or a longer space of time in cases of contracted pelvis. Two of the mothers died, both from severe eclampsia; the foetus was putrid in both cases. One child required craniotomy on account of its great size. Three children died from placenta prævia and strangulation by the funis. One, hardly thirty-two weeks old, died a quarter of an hour after birth. Only in one case could the violence of the pains be a possible cause of the death of the child. The glycerin had done its duty. Pelzer, however, deprecates injudicious zeal in this method; thirty to fifty cubic centimetres, not one hundred cubic centimetres, are sufficient for injection. The method is not suitable for cases of eclampsia and placenta prævia, except the lateral variety, where the placenta can be avoided.

GEUER (*ibid.*) read notes of three cases of induction of premature labor by injection of glycerin, in all of which both mother and child were saved. The first two mothers were over thirty-two, with contracted pelvis; craniotomy had been performed in previous labors. The third case was an instance of bad eclampsia; 40 grammes of glycerin were injected, the os being at the time uncontracted; there was oedema, with much albuminuria. Forty hours later a healthy living child was born.—*British Medical Journal*, July 21, 1894.

#### APPENDICITIS OBLITERANS.

SENN (*Journal of the American Medical Association*, quoted by the *Canadian Practitioner*, July, 1894) concludes his paper on this subject as follows:

1. Appendicitis obliterans is a comparatively frequent form of relapsing inflammation of the appendix vermiformis.

2. It is characterized by progressive obliteration of the lumen of the appendix, by the gradual disappearance of the epithelial lining and glandular tissue, and the production of granulation tissue from the submucous connective tissue, which, by transformation into connective tissue and cicatricial contraction, starves out remnants of glandular tissue, and finally results in obliteration.

3. The obliterating process manifests a progressive tendency, and may finally result in a complete destruction of all glandular tissue and obliteration of the entire lumen.

4. The incipient pathologic changes occur either in the mucous membrane of the appendix, in the form of superficial ulceration, or as

an interstitial process following lymphatic infection.

5. The most constant symptoms which attend this form of appendicitis are relapsing acute exacerbations of short duration, moderate or no appreciable swelling at the seat of disease, and persistence of soreness and tenderness in the region of the appendix during the intermissions.

6. The process of obliteration may begin at the distal or proximal end, or at any place between, or it may commence simultaneously, or in succession at different points.

7. Obliteration on the proximal side gives rise to retention of septic material, which finds an outlet through the lymphatics, giving rise to non-suppurative lymphangitis and lymphadenitis.

8. Circumscribed plastic peritonitis is an almost constant concomitant of appendicitis obliterans, and hastens the process of obliteration.

9. Complete obliteration of the lumen of the appendix results in a spontaneous and permanent cure.

10. In view of the prolonged suffering incident to a spontaneous cure by progressive obliteration and the possible dangers attending it, a radical operation is indicated, and should be resorted to as soon as a positive diagnosis can be made.

#### RESORBINE: A NEW OINTMENT BASE.

LEDERMANN (*British Journal of Dermatology*, July, 1894) reported to the Berlin Dermatological Society a base which is capable of traversing the skin after moderate rubbing in, and which leaves a slight covering layer. It is made with some difficulty after a patented method by emulsifying pure almond oil and a little wax with water and a small percentage of other innocent but necessary vehicles. Resorbine can be mixed with all vegetable and animal fats. It is especially advantageous to add a little lanolin. Its use is indicated in all the hyper- and parakeratoses, as ichthyosis and pityriasis, and in scleroderma, in artificial dermatitis, ulcerations, rhagades, scabies. It combines well with Neapolitan ointment. The price is about the same as that of lanolin.

#### STATICAL ELECTRICITY IN ECZEMA.

DOUMER (*Arch. d'Électricité Médicale*, May, 1894) reports favorable results in eczema from the employment of the electric soufflé. Of fifty cases, forty-eight were completely and rapidly cured. The cases enumerated include both

acute and chronic eczema, and the patients were of various ages. He advises the use of a machine capable of giving sparks three inches long, and an electrode with points for the breeze or brush discharge. Either the negative or the positive pole can be used, no difference in their action upon the complaint having been noticed.—*British Medical Journal*, July 14, 1894.

#### APPLICATION FOR PSORIASIS.

Chrysarobin is dissolved in chloroform (1 to 7), and to it an equal amount or less of linseed oil is added and thoroughly stirred with a hog's bristle shaving-brush. With this mixture the diseased area is well scrubbed.—*British Journal of Dermatology*, July, 1894.

#### DOUBLE SEPTIC ORCHITIS COMPLICATED BY PERITONITIS.

HORNUS (*Archiv. de Pharm. de Mil.*, July, 1894) records a case of double septic orchitis complicated by peritonitis and terminating fatally. The patient had no preceding venereal disease. The onset was sudden. After a few days symptoms of peritonitis set in. The patient perished. On incision into the testicles pus was found, the glandular substance of the organs having been completely destroyed. This pus had extended along the cord through the inguinal canal and into the iliac fossa, where several drachms were found. The inflammation is supposed to have been due to mumps. Early free incision probably would have prevented extension of the inflammation to the peritoneal cavity.

#### TYPHOID FEVER COMPLICATED BY GANGRENE IN BOTH LEGS.

DURAND (*Archiv. de Pharm. de Mil.*, July, 1894) publishes a case of typhoid fever complicated by gangrene in both legs. At the third week of his disease the patient complained of a tickling sensation and of coldness in both feet. On the following day, in addition to these symptoms, he had incontinence of urine, and had a constant desire to pass his water. Examination then showed discoloration of the feet, total loss of sensation, and marked lowering of temperature. The symptoms of local gangrene steadily progressed; this took the dry form. Some disseminated gangrenous spots also appeared on both legs in the region of the sacrum and the right trochanter. The gangrenous process slowly extended, the patient



at the same time steadily losing ground. Four months later both legs were amputated at about the upper third. The patient recovered.

### THIOSINAMIN INJECTIONS IN LUPUS.

DR. W. VAN HOORN (*Monatshefte für Praktische Dermatologie*, June, 1894) has used thiosinamin in a few cases of lupus, and reports the following results:

After the injection of the drug there was swelling of the skin, often very considerable and rapid; twenty-four hours later a rich desquamation followed; while during reaction there was a sense of heat and stretching of the affected point.

When treatment was regularly followed there was almost always improvement; ulcers healed over, swellings were reduced level with the surface. One patient, with wide-spread "lupus tumidus" and "verrucosus" of the left arm and back of the hand, showed marked improvement after fourteen days. Yet in three other cases in which the treatment was followed he saw no improvement until he changed to salicylic plaster.

In two cases, handled unsuccessfully with tuberculin, thiosinamin was tried for fifteen months, an injection being given every two to three weeks.

At first two cubic centimetres (.2 gramme of thiosinamin) of a fifteen-per-cent. alcoholic solution (Hebra), and later the same dose of a ten-per-cent. glycerin solution (Duclaux) was used, the latter causing less pain upon injection. Throughout the entire fifteen months the injections were well borne and improvement noted, but at the expiration of this time the patients complained of loss of appetite, numbness of the head, and a sense of weakness and fatigue in the whole body, but especially the limbs.

These complaints increasing after each injection and lessening upon cessation of treatment, the treatment was discontinued, and again improvement was noted for another three months. As a result of his experience, he thinks that in most cases of lupus it is not wise to commence with the thiosinamin treatment, but to hold it in reserve until after the local treatment has failed.

### INGESTION OF THE THYROID GLAND OF THE SHEEP IN MYXEDEMA.

At a meeting of the Hospital Medical Society, Paris, M. P. MORIE (*Revue de Thérapeutique Médico-Chirurgicale*, June 15, 1894) re-

ported a case of myxœdema cured by the ingestion of the thyroid gland of the sheep.

The woman, aged forty-two years, had been unsuccessfully treated by injections of the juice of the thyroid gland. Last October she commenced eating daily two lobes of the thyroid body of the sheep, and her condition is now much improved, perhaps is cured, but he considers it necessary to continue the treatment indefinitely.

### A NEW METHOD OF REDUCING BACKWARD DISPLACEMENTS OF THE UTERUS.

JULES BATNAUD (*Revue Médico-Chirurgicale des Maladies des Femmes*, May, 1894), reporting the communication of Rapin at the Rome Congress, says that many cases of backward displacement of the uterus, in which this organ is supposed to be adherent to the surrounding viscera, are, as a matter of fact, simply held in Douglas's pouch by a combination of atmospheric pressure, the intestines, and the two layers of the sacro-uterine ligament, which imprison it laterally. To dislodge the uterus from this incarcerated position, Rapin has proposed this procedure:

The first two times insert the sound and rotate in the usual way. If the position remains unchanged, the third time, instead of lowering the handle of the sound, press upon the sound from behind forward and from below upward, moving the uterus as with a lever; by so doing one presses upon the entire anterior face of the uterine cavity, not only with the point, but with the entire part of the sound within the uterus; then we raise and draw the uterus forward and upward without endeavoring at first to replace it.

By this manoeuvre we dislodge the fundus from the rectum, opening the cul-de-sac, and the intestines, pressed down by the atmospheric pressure, fall into the place formerly occupied by the fundus, thus aiding in the forward movement of the organ.

At the moment the intestines assume their new position one feels that the resistance is overcome, and if now the handle of the sound is lowered, the replacement is completed without the aid of force or the provoking of pain. The sound is withdrawn, while, with the index finger still in the vagina, the neck of the uterus is pushed backward and the fundus comes forward into position. When there is resistance to the upward and forward traction, instead of the continuous pressure, a to-and-fro or a sawing movement causing the uterus to advance in a zigzag manner is often of advantage.

In all these manipulations the sound is governed by one hand, while the index finger of the other is placed within the vagina, palpating the cul-de-sac and controlling the sound within the uterus.

To maintain the uterus in position a pessary is used that fits partly in the vagina and partly within the uterine cavity.

#### REMOVAL OF LARGE FIBRO-MYOMAS OF THE UTERUS BY MEANS OF A PERI-NEO-VAGINO-RECTAL INCISION.

At the Rome Congress, M. PÉAN (*Revue Médico-Chirurgicale des Maladies des Femmes*, May 25, 1894), under the above title, proposed a method for the removal of large interstitial fibroids of the uterus, attacking the tumor from below.

To obtain access to the tumor two large toothed forceps are used; the blades of the instruments being placed respectively in the vagina and rectum and forcibly closed, render the further steps of the proceeding bloodless. The perineum is divided in the median line, including the vaginal and rectal mucous membrane, up as far as the peritoneum, exposing the tumor. The two large hæmostats, being given to an assistant, are used as retractors, and the tumor is seized with toothed forceps and removed piecemeal, endeavoring to preserve all the uterine structure possible.

Bleeding from the tumor cavity is controlled with hæmostats, which are removed in a few hours, while the cavity is packed with iodoform or some suitably-prepared sponge, and a large drainage-tube is also inserted. After two or three days the sponges are removed and the cavity is cleansed by antiseptics passed through the drainage-tube.

The operation is concluded by sewing the two mucous surfaces of the vagina and rectum together with catgut, the intermediate structures being united; the operation is thus hastily and easily executed.

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### Correspondence.

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LONDON.

(From our Special Correspondent.)

*The Evelina Hospital for Sick Children.*—A visitor to London might very well spend a part of his time in visiting the various hospitals. In former letters I have attempted to give some idea of the working of St. Bartholomew's Hospital, the most flourishing of our larger institu-

tions, with the view of rendering it more easy for an intending visitor to see the things most worthy of notice with the greatest economy of time. In the present communication I hope to give a similar idea of one of the minor hospitals,—the Evelina, situated in Southwark, and devoted entirely to the treatment of the diseases of children.

Instituted about four and twenty years ago, under the immediate care of Baron Ferdinand Rothschild, the hospital has enjoyed perhaps exceptional advantages. Under these auspices it has grown from an institution of only twenty-four beds to one capable of accommodating sixty-six in-patients; and its increase is not going to stop here, for arrangements are already on foot, and will very shortly be carried into effect, by which the number of beds will be increased to a hundred. The accompanying plan, kindly furnished to me by Dr. Soltau Fenwick, one of the honorary physicians, will give a very good idea of the present arrangement of the building and also of the proposed alterations and enlargements. It is also to Dr. Fenwick that I owe most of the information which I am here enabled to place before your readers.

*As to the Actual Working of the Hospital.*—This is in the hands of two resident medical officers, two physicians to in-patients, two physicians to out-patients, and similarly two in- and two out-patient surgeons. The wards are practically fed from the out-patient department, and during the past year six hundred and twenty-seven children were admitted as in-patients, each making an average stay of thirty days. All diseases other than those of an infectious nature are eligible for treatment. The only infectious disorder in favor of which an exception is made is whooping-cough. The out-patient medical staff attend on four days and the surgeons on two days in the week. Each day an average of about twenty new cases is seen in this department, so that in the course of the year something like two thousand new cases come to each member of the staff. Add to this number an average of a hundred "old" patients daily, and it will be seen that the field for clinical observation is by no means a limited one.

*The Surgical Side.*—The surgeons are well provided for, and there is a good deal of operative work which falls to their share. Most of the minor operations are performed in the out-patient department, many of them under chloroform. The rest, comprising those of gravity or of a tedious nature, are performed in the excellent operating-theatre, which is complete

with every modern appliance. It will be found that in this, as in most other children's hospitals, chloroform is preferred by the anæsthetist, and has always been administered with perfect safety. If asked what are the conditions which most frequently come for operative treatment, I should say that necrosis of the various long bones and empyemata are far the most numerous; but in a poor neighborhood like that in the heart of which the hospital is situated, accidents are often occurring, and these naturally fall to the lot of the surgeons.

*The Medical Side.*—As a transition from the surgical to the medical work, I may draw attention to the empyemata, which come generally under the care of both physicians and surgeons. In this condition experience shows that considerable time and risk are saved by resorting as early as possible to active surgical measures. If the physical signs point to an effusion of a purulent nature,—high temperature, embarrassed breathing, displacement of thoracic viscera, dulness on percussion, alteration of the pleximetric curve, etc.,—an exploratory puncture is at once made by means of a small syringe or aspirator needle, and if the diagnosis be confirmed, free incision and drainage are carried out without further delay. As is well known, the prognosis in children is particularly favorable and death hardly ever occurs.

At this season of the year the most common ailment in the medical department is diarrhoea. Dr. Fenwick tells me that his experience leads him to rely chiefly upon antiseptics in such conditions. His favorite remedy is benzo-naphthol, which is given in grain doses thrice daily, even to very young children. It will be remembered that benzo-naphthol is a benzoate of  $\beta$ -naphthol, and that it is said to break up in the intestine into its constituents, both of which have an antiseptic action. Another remedy much used in this condition is carbolic acid, which is given in minim doses, either as a mixture or in the form of perle. Some of the physicians prefer creolin, giving it in drop doses on sugar, and in many cases this treatment is highly successful. Its nauseous odor and taste, however, prevent its finding favor with children. Lastly, creosote is used by some, but this is open to the same objections, and to a greater degree, as those already referred to in regard to creolin.

*Chorea* is another affection frequently met with in the out-patient department. The treatment of this affection hardly presents peculiarities. The little patients rapidly improve on large doses of belladonna or liquor arsenicalis. It is well known what large quantities of these

drugs choreic children will tolerate without difficulty.

*Whooping-cough* comes so often under treatment that it has been deemed desirable to devote a whole ward to the treatment of this affection. The most successful of all drugs at present in vogue is bromoform. It is given in doses of from 1 to 5 minims, either suspended in syrup or in a mixture, the taste being concealed by means of paregoric or some other flavoring ingredient. The drug does not appear to alter the duration of the affection, but is most useful in checking the paroxysms of cough and vomiting. I do not know whether it is a matter of common observation in other institutions, but I am given to understand that quite a large proportion of the serious cases of whooping-cough admitted at the Evelina develop military tuberculosis after admission.

Another ailment frequently met with in all children's hospitals—nocturnal incontinence—is generally treated by the application of the faradic current, used as strong as the patient can bear it. One pole is applied to some neutral point, such as the nape of the neck, and the other is applied to the perineum, the latter electrode being more or less cone-shaped, and provided with a movable covering of either chamois leather or, better, of amadou. With this arrangement a fresh covering can be used for each patient. Improvement is generally very rapid, and the trouble often ceases after a few applications of the current. Should it relapse, a renewal of the treatment is attended with equal success. Treatment by such means is found to be far more successful than by any of the drugs, such as belladonna, which were formerly employed, but which, if used at all, are given solely as adjuncts to the electrical treatment.

To complete this account of the Evelina Hospital, I would mention that there is a very efficiently equipped dispensing department, at which the patients, after receiving their prescriptions from the physicians, have their medicines dispensed to them, each patient contributing the nominal sum of a penny, which, presumably, covers the cost of bottle, cork, etc.

I am informed that medical men, of whatever nationality, are at all times cordially welcomed to follow the practice either of the out- or in-patient department, and as patients are expected to attend at 9 A.M., a very considerable amount of clinical material can be seen before mid-day, so that a morning spent in the institution cannot fail to be profitable to all who avail themselves of this invitation.

At the recent meeting of the British Medical

Association, among other papers, was one upon "The Diagnosis of the Three Chief Forms of Contagious Ophthalmia,—namely, the Catarrhal, the Purulent, and the Granular Varieties," read before the Section of Ophthalmology by Henry Juler, F.R.C.S., ophthalmic surgeon to St. Mary's Hospital, etc.

Mr. Juler, in commencing his paper, regretted the imperfect knowledge with regard to the specific cause of these conjunctival complaints, stating that we could at present in many instances only rely upon a diagnosis by the clinical features of the case.

He discussed these diseases under two heads,—the acute forms of ophthalmia and the chronic.

In the three common acute varieties—the purulent, the catarrhal, and the granular—many symptoms are similar, and no one may be characteristic; for example, the discharge may be purulent in all three cases. We are, however, able to distinguish the gonorrhoeal variety by the presence of the gonococcus of Neisser. Great intensity of the symptoms, with brawny infiltration of the lids, is much more common, too, in this variety than in the others.

Acute granular conjunctivitis is to be recognized if the "sago-grained" granulations are seen on the palpebral conjunctiva. Their absence, however, is not sufficiently trustworthy to exclude the disease, as the inflammatory infiltration during the active stage often masks these diagnostic bodies. It usually subsides into a chronic condition.

Acute catarrhal ophthalmia, though frequently severe and attended with excessive discharge and conjunctival hemorrhages, occasioning great discomfort, besides being a most contagious affection, subsides under proper treatment in about fourteen days.

Though the presence of a micro-organism has been proved, more evidence is wanted to prove it the specific cause of the disease.

Mr. Juler considered that most cases of chronic ophthalmia came under the headings of chronic catarrhal and chronic granular conjunctivitis. He entered into the question of the value of the lymphoid follicles, or so-called "trachoma capsules," as a help in the diagnosis of these complaints. He is of opinion that lymphoid follicles exist normally in most cases in the cul-de-sac, and that they are, as it were, sentinels which give warning of the approach of foreign or irritating substances and endeavor to eliminate them; consequently these follicles are liable to become inflamed either from simple or specific causes. He believes that

only in trachoma are capsules to be found in abnormal positions, as on the palpebral conjunctiva. He showed a number of photomicrographs of these bodies and of other histological changes in these membranes. One of them illustrated a follicle embedded in the substantia propria of the cornea, consecutive to a violent attack of granular ophthalmia and progressive pannus.

So-called follicular conjunctivitis, Mr. Juler regards as a simple non-contagious affection, allied to chronic catarrhal ophthalmia, but characterized besides by hyperplastic changes in the follicles. He emphasized the difficulty of distinguishing between certain cases, and pointed out that their behavior to treatment is very often the only way of arriving at a correct diagnosis.

#### HEMORRHAGE IN TYPHOID FEVER.

To the Editors of the THERAPEUTIC GAZETTE:

DEAR SIRS:—I have just read your editorial on the treatment of hemorrhage in typhoid fever. Last year I treated quite a number of cases of typhoid fever, and out of twenty-seven had four very bad cases of hemorrhage. Now, in all these I used the same plan of treatment, with the best results, having only one case in which there was a slight recurrence.

This treatment was given in a paper read by me before the Medical Society of the District of Columbia, on the general treatment of typhoid fever, and consisted of the following plan:

I immediately applied an ice-bag upon the right iliac region, interposing between the patient and the ice-bag a double layer of white flannel; and applied also a cotton bandage over the ice-bag, moderately tight, making a local compress of the ice-bag, as well as getting the effect of the cold upon the region from which I thought the hemorrhage came. At the same time I raised the hips with a small hair-pillow and removed those from under the head.

By the mouth I gave, in each case, a pill consisting of one grain of opium and one of sugar of lead, every three hours, until the patient was thoroughly under the effect of the opium; at the same time I gave an enema of one pint of ice-cold water, containing one dessert-spoonful of tannic acid. I don't think I have ever seen better results obtained from any other treatment, and can recommend the same to the profession with the greatest confidence in its efficacy.

Respectfully yours,

CHAS. G. STONE.

BRIGHTWOOD, D. C.

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## Original Communications.

### NOTES ON DIABETES, TREATED WITH EXTRACT AND BY GRAFTS OF SHEEP'S PANCREAS.

BY P. WATSON WILLIAMS, M.D. (LOND.),  
Senior Assistant Physician, Bristol Royal Infirmary.

NO disease has received a larger share of attention at the hands of clinicians, pathologists, and chemists in the last fifty years than has diabetes, while the ample literature and the very diverse opinions that have been advanced by the most able observers in regard to its pathology and treatment testify to the difficulties

which surround us when we seek to explain the problems involved. Certain facts recently come to our knowledge seem at first sight to justify very important conclusions as to the real nature of the disease *diabetes*, and to indicate fresh lines of treatment as at least affording some chance of increased control over this disease.

It would serve no useful purpose were I to attempt to review and to reconcile the results of recent investigations in the region of difficulty; they are well known to all physicians who are acquainted with current medical literature, and have proved a source of perplexity to many who are better able than I am to speak on the subject; but as the question of the

treatment of pancreatic diabetes by means of the pancreas or its extracts is a matter of special interest, and more especially as the possibility of treating pancreatic diabetes by means of grafts of pancreas is likely to receive further attention in the immediate future, I think it is my duty to place on record the results in a case unsuccessfully treated by myself, and to indicate what my unfortunate experience may teach us to avoid.

Before relating my own brief experience, I would call to mind the two interesting cases of diabetes resulting from obstruction to the pancreatic duct reported by Freylan,\* which support the conclusions of Minkowski, based on his recent investigations in the diabetes resulting from destruction of the pancreas in dogs. In Freylan's first case—that of a man aged thirty-five, who was passing seventy ounces of urine, containing three per cent. of sugar—diabetes was immediately due to tubercular disease of the lungs. The pancreas was atrophied, and no trace of parenchyma was observable in the microscopic sections. The pancreatic duct was completely occluded by concretions of carbonate of lime. His second case was that of a woman passing seventy ounces of urine containing eight per cent. of glucose. Death resulted from kidney-disease, but the pancreatic duct was found blocked with calcareous detritus, and a definite calculus was found in the gland itself, while the gland only contained a few isolated nodules of normal tissue, the remainder being atrophied.

CASE I.—C. T., aged fifteen, was admitted to the Bristol Royal Infirmary on July 31, 1893.

He was in good health up to three weeks before admission, when he began to complain of thirst, and was noticed by his parents to be wasting rapidly and getting extremely weak. Patellar tendon reflexes absent; no fatty stools.

On admission he was weak,—rapidly wasting; weight, five stone nine pounds four ounces; skin dry; average daily amount of urine, seventy-seven ounces, containing 3212.1 grains of sugar and two and a half per cent. of urea; daily amount of fluid drunk, seven pints.

The case was so grave that I did not consider I was justified in waiting more than two days on a strict diet, modified by allowing brown bread, before commencing active treatment, for the amount of sugar had risen to nine per cent. in seventy-eight ounces. On August 3, therefore, he had an absolutely restricted diet with gluten bread. From this day he took

freshly-minced pancreas for seven days, then 1 drachm freshly-prepared liquid extract of pancreas three times daily with his meals, and had a drachm every time he took any food at all in the intervals, so that he never had any food without pancreatic extract.

This was continued for four days more, the urine, the amount of sugar, and the polydipsia all steadily diminishing, till on August 11 he passed only fifty-six ounces, with 4.16 per cent. of glucose. For four days he had three fluidrachms of the extract hypodermically daily (except on the first of these four days, when he had two), with practically no alteration in the symptoms; then the pancreatic extract was again resumed by the mouth, as before.

By this time the elimination of sugar amounted to about eleven hundred and eighty-eight grains daily,—i.e., was reduced to nearly one-third of what it had been,—the urine passed was about fifty ounces daily, and the polydipsia correspondingly improved.

The diet and administration of pancreatic extract remaining unaltered, he was now ordered one and a half grains of codeine daily. In seven days the sugar averaged four hundred and fifty-six grains and urine fifty ounces daily.

The pancreatic extract was now left off (August 27), as I believed that the reduction of sugar in the first instance was due to the strict dietary and in the second to codeine. No other alteration was made, but within two days the amount of sugar nearly trebled; in four days it had risen from an average of 1.9 to 7.1 per cent. But after simply resuming the pancreatic extract, it remained as high as ever, and only fell slightly on changing the gluten bread for Clarke's starchless biscuits. In the mean while he gained five pounds, but had again lost four pounds in weight.

On September 18 the codeine was increased to two and a half grains daily, but without benefit. Without further alteration, the freshly-prepared glycerin pancreatic extract by the mouth was discontinued on September 20, and 1 drachm daily of pancreatic extract, prepared in Paris by Brown-Séguard and D'Arsonval's process, was given hypodermically for eleven days. The amount of sugar eliminated rather increased, and here the treatment by pancreatic extract was left off. The boy was—in spite of a very fair trial of pancreatic extract both by the mouth and under the skin, combined with strictest regimen, and both without codeine and subsequently with two and a half grains daily—practically in the same position as on

\* *Berl. Klin. Woch.*, No. 6, 1893.

admission. He was passing 8.2 per cent. of sugar in sixty-six ounces of urine daily.

On October 6 the codeine was increased by four grains a day. In six days' time he began to be a little sleepy in the daytime, although getting up every day. There was a slight diminution in the amount of sugar eliminated (6.2 per cent. in about sixty ounces of urine).

On October 14 I obtained a supply of freshly-prepared orchitic fluid, procured from a young bull by D'Arsonval's process by my friend Dr. Pagan Lowe, of Bath, and without any other alteration in the conditions, the patient had 1 drachm daily injected hypodermically, and as he felt so much brighter and better, this was continued, and although the amount of sugar passed was at first increased, it again decreased to about 5.5 per cent. in fifty-five ounces.

*October 26.*—The codeine discontinued, but the amount of sugar so greatly increased that in twelve days I felt it advisable to give morphine ( $\frac{3}{4}$  grain daily at first, subsequently less).

At first the effect of the morphine was very satisfactory, but about December 17 it appeared to be losing its power of controlling the diabetes, and once more the glucose rose to 8.3 per cent. in eighty ounces of urine.

The advisability of resorting to grafts of sheep's pancreas had occurred to me, and my medical colleagues, who had kindly seen this case with me frequently during the time the patient was under my care, agreed with me that the case was one which offered some chance of benefit from such a procedure, seeing that laboratory investigations of Minkowski and others appeared to lend some hope that the patient might be favorably modified.

I had previously visited a neighboring slaughter-house in order to familiarize myself with the best method of rapidly extracting the pancreas from a sheep. By suspending the carcass by the hinder extremities, one had only to open the abdomen and allow the intestines and stomach to fall down, and the pancreas was exposed and readily removed.

On December 20 my surgical colleague, Mr. Harsant, placed the patient under chloroform, while I extracted the pancreas with strict aseptic precautions from a freshly-slaughtered sheep, so that by the time the patient was anæsthetized the pancreas was at hand, and three pieces, each the size of a Brazil-nut, had been grafted into the subcutaneous tissues of the breast and abdomen, and the operation completed within twenty minutes of the death of the sheep. The patient was under the anæsthetic a quarter of an hour. The wounds were dressed

antiseptically. He passed one hundred and sixteen ounces of urine, containing 7.4 per cent. of sugar in the following twenty-four hours.

On December 22 ninety-five ounces of urine containing 3.12 per cent. of sugar were passed. The incisions appeared perfectly healthy, and Mr. Harsant considered that they were healing by first intention; but he felt very depressed and weaker and drowsy, and there was every indication of coma supervening. The urine yielded a more decided acetone reaction, although this had been noticed in a less degree for some weeks. With a view to prevent the onset of coma, bicarbonate of potassium was administered and an aperient ordered.

On the 23d he died comatose. Large doses of citrate of potassium by the mouth, combined with thirty grains of bicarbonate of sodium, given hypodermically in three doses, had had no effect whatever. Oxygen inhalations and oxygen water had also been tried.

*At the autopsy* on the following day the heart and lungs were found to be normal, but the liver and kidneys were enlarged and fatty.

The pancreas only weighed half an ounce in its capsule. It was small, shrivelled in appearance, and seemed to be little else than fibrous tissue. Examination of sections of the pancreas showed that almost all the secreting structure had disappeared, and that the gland consisted of little else but fibrous stroma.

The grafts had apparently failed to become united with the tissues around, and though the incisions in the skin had apparently united, numerous micrococci were found on microscopical examination, but the autopsy was made sixteen hours after death from diabetic coma.

*Remarks.*—I think that the considerable number of cases of diabetes that have now been recorded as having been treated with pancreatic extract by the mouth have shown that practically nothing can be expected from such treatment. In the case of C. T. the method received a very fair trial, the freshly-prepared extract being given first every time the patient took any food whatever, and subsequently by cutaneous injection.

Of course, in some respects this was not a typical case of pancreatic diabetes, inasmuch as the amount of urine was not very excessive and there were no fatty stools, but I think the history of the case and the post-mortem examination of the pancreas leave no doubt that it was rightly considered to be pancreatic diabetes, and one that presented all the conditions that might lead one to hope for a beneficial re-

sult from successful grafting of the pancreas, if anything can be hoped for in this direction at all.

Failure was possibly due to obtaining the graft from a sheep that had been killed by bleeding, and I fear may have been rendered more likely from the administration of the anæsthetic. If I ever again felt justified in resorting to pancreatic grafts in a similar case, I should obtain them from a living animal anæsthetized, and dispense with the anæsthetic altogether.

CASE II.—W. H., male, aged forty-seven. Symptoms of diabetes began about February, 1892. In November he came under me, when I took him into the Royal Infirmary. He was passing sixty-five ounces of urine daily, containing about 1245 grains of sugar. After a restricted diet, and while taking small doses of phosphorus and arsenic, the amount of sugar increased to 1800 grains daily. On the same diet, but taking 1 grain of codeine daily for four days, the amount of urine increased to eighty-eight ounces, with 1920 grains of sugar daily; but after persisting in this course of treatment for twenty-nine days the sugar eliminated amounted to 1742 grains daily. At this point (January 12, 1893) I gave him 40 minims of pancreatic extract (the freshly-prepared glycerin extract) daily as a hypodermic injection. After a few days the extract was given instead by the mouth for some days, but under the treatment by pancreatic extract his condition remained in *status quo*. The patient was then placed on codeine, with strict diet, and he improved greatly, and eventually completely recovered. In this case the fresh pancreatic extract, whether given hypodermically or by the mouth, was valueless, yet codeine and dieting brought about complete recovery.

CASE.—C. T., on admission, first two days, average amount of sugar passed in twenty-four hours, 3212.1 grains.

August 11.—After four days' strict diet and pancreatic extract by mouth, average amount of sugar passed in twenty-four hours, 978.8 grains.

August 15 and 16.—After four days' strict diet and pancreatic extract hypodermically, average amount of sugar passed in twenty-four hours, 983.8 grains.

August 18 and 19.—After pancreatic extract resumed by the mouth, average amount of sugar passed in twenty-four hours, 1188 grains.

August 26.—After seven days of pancreatic extract by mouth, strict diet, and codeine  $1\frac{1}{2}$  grains daily, average amount of sugar passed in twenty-four hours, 456 grains.

August 31.—After four days of same conditions, except that the pancreatic extract was discontinued, average amount of sugar passed in twenty-four hours, 1872 grains.

September 18.—After conditions of August 26 had been resumed for eighteen days, average amount of sugar passed in twenty-four hours, 1733 grains.

#### NOTES ON SOME NEW DRUGS USEFUL IN OPHTHALMOLOGY.

READ BEFORE THE SECTION OF OPHTHALMOLOGY, BRITISH MEDICAL ASSOCIATION, BRISTOL MEETING, 1894.

BY T. J. BOKENHAM, M.R.C.S., L.R.C.P.,  
Research Scholar, British Medical Association.

DURING the past year or more I have made it my business to test the utility of several drugs of recent introduction. The properties of some of these seem to indicate that they may occupy a prominent place in ocular therapeutics, and I take this opportunity of bringing them more prominently into notice, so that others who may have more extensive opportunities of observation than myself may add their testimony to my own. Without further prelude I will now proceed to my subject.

*Scopolamine*.—Some time during 1889 a rhizome appeared in the market, imported from Germany, where it was stated to be indigenous. It was introduced as a new and cheap source of atropine, and its juice certainly had powerful mydriatic properties. It was identified as the rhizome of *Scopolia Carniolica*, and its chemistry was investigated by Dunstan and Chaston on behalf of the Pharmaceutical Society. These observers found it to contain almost pure hyoscyamine, with a mere trace of hyoscyne, and no other alkaloids. As, however, the chemistry of the *Solanaceæ* is wrapped in considerable obscurity, owing to the ease with which one alkaloid passes into another in process of isolation, the chief point of interest in these researches is the proof that the rhizome contained a mydriatic alkaloid chemically indistinguishable from hyoscyamine.\*

My attention was first drawn to this new drug in 1890, when I received a specimen of the new alkaloid from Messrs. Burroughs and Wellcome. I was at that time working in Dr. Lauder Brunton's laboratory at St. Bartholomew's Hospital, and I there made several ob-

\* *Pharm. Journ.*, December 14, 1889; Schmidt, *Pharm. Zeit.*, September 25, 1889; Siebert, *Arch. der Pharm.*, February 20, 1890.



servations as to its effect on blood-pressure, pulse, etc. Its general action on animals was not, however, thoroughly tested, as rodents—the only animals I had at my disposal—are not easily susceptible to the action of the atropoid alkaloids. On myself the hypodermic injection of .01 grain was practically without effect, producing neither excitement, dryness of the throat, nor dilatation of the pupil. Some clinical investigations by Sir Dyce Duckworth also seemed to show that the drug had many of the advantages of atropine, while not sharing all its drawbacks.

In rabbits and cats under anaesthesia, tracings of the carotid pressure before and after the injection of a solution of scopolamine showed that the drug in moderate doses had little or no effect either on the rapidity or force of the heart-beat. After a dose which, had it been atropine, would have quickened the heart (cat) by paralysis of the inhibitory fibres of the vagus, the pulse was slightly slowed, and it was only after very large doses that acceleration was observed, and even then the vago-inhibitory effect was not completely abolished.

Its mydriatic effect was tested both in animals and on myself. In my own case a solution of 1 to 1000 was employed, and I found that instillation of 2 or 3 drops twice, at intervals of half an hour, was sufficient to produce complete dilatation of the pupil and paralysis of accommodation. No unpleasant phenomena accompanied this action, my accommodation being almost restored after thirty-six hours, and the pupil being normal in a little less than three days; only one eye was drugged.

Seeing that scopolamine had again recently attracted the attention of foreign ophthalmologists, notably of Raehlmann,\* who reported most favorably on its action as a paralyzant of accommodation, I procured a fresh specimen of the hydrobromate, through Messrs. Burroughs and Wellcome. This I have used in a number of cases where I should ordinarily have employed belladonna. With a strength of 1 to 250 I find that three instillations within an hour are sufficient to produce complete cycloplegia, so that an error of refraction can be estimated with accuracy. In a fair number of observations I have not once seen the production of undesirable complications, such as excitement, dryness of the throat, or erythema, even in children, who are most susceptible to the action of atropine. I have generally, my observations being concluded, introduced an eserine disk (Wyeth), in order to hasten the

return of accommodative power, but I do not know that this is quite necessary, for in three days at most the eyes may be considered normal.

Personally, I have had but little experience of scopolamine for other purposes than to facilitate the estimation of refraction. Raehlmann, however, speaks of its utility in inflammatory conditions of the cornea, phlyctenular keratitis, corneal ulcer, iritis, etc., the drug being well borne where atropine was not tolerated, and producing no rise of tension even when used day after day.

My own experience of the strength necessary coincides with that of other observers. A strength of 1 to 250 and 1 to 500 is quite sufficient for all purposes for which atropine can be required, and an even weaker solution is often admissible.

I must add also the results obtained by Pooley (*THERAPEUTIC GAZETTE*, March, 1894). This observer, while considering scopolamine as useful in any cases where an atropoid action is desired, yet utters a note of warning necessitated by his own experience.

In three cases, each of which had obtained the drug from a chemist and made the instillations personally, unpleasant phenomena resembling those of atropine-poisoning ensued. It is possible, however, that the solution was used with undue frequency or too liberally, as these are the only three observations of a similar nature on record.

To conclude, I would counsel a trial of scopolamine,—

1. Because its action is slightly more powerful than that of homatropine.
2. Because its action is more rapid than that of atropine and a less quantity is required to produce the same effect.
3. Because its action passes off with greater rapidity than that of atropine.
4. Because toxic symptoms seem little likely to ensue from its use.

*Tropa-Cocaine.*—Quite recently I have brought a number of my observations with this drug before the Ophthalmological Society, so that on this occasion I can be quite brief. My experience with tropa-cocaine as a local anaesthetic has since the paper mentioned increased considerably, and I am pleased to say that my opinion as to the utility of the drug for this purpose remains unaltered. Its great value resides in the fact that by its aid local anaesthesia can be produced uncomplicated by dilatation of the pupil or loss of accommodative power. This is a great boon to, say, a patient who only needs the painless removal of a foreign

\* *Klin. Monatsb. für Augen.*, February, 1893.

body. I formerly employed the drug in tabloid form, but I think that it is perhaps less irritating on first application if used in solution, a strength of three per cent. being quite sufficient for most purposes.

*TREPHINING FOR MIDDLE MENINGEAL HEMORRHAGE WITHOUT FRACTURE OF THE SKULL.*

READ AT THE FEBRUARY MEETING OF THE PHILADELPHIA NEUROLOGICAL SOCIETY, 1894.

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**E**XTRADURAL hemorrhage without fracture of the skull is due in nearly every instance to rupture of the middle meningeal artery or one of its branches. This artery springs from the internal maxillary and enters the cranium through the foramen spinosum; it then divides into two branches,—the anterior and the posterior. The anterior or larger branch crosses the great ala of the sphenoid, and reaches the groove or canal in the anterior inferior angle of the parietal bone, when it divides into branches, to be distributed over the dura mater and inner surface of the cranium. The posterior branch crosses the squamous portion of the temporal bone, and on the inner surface of the parietal bone divides into branches to supply the posterior part of the dura and cranium.

One or both branches of the artery may be ruptured; the main trunk is seldom injured. Very occasionally the vessels upon the opposite side of the skull from the point of injury are torn by counter-stroke, and when this occurs it is only by the localizing symptoms that we are able to find the bleeding vessel. The cause is usually a fall upon the head, and often from a very short distance, or it may be due to a blow of the fist or some heavy instrument. The amount of violence necessary to produce rupture of these vessels is frequently very slight, and at times not sufficient to cause the individual to fall to the ground if struck a blow on the head, or to produce even momentary unconsciousness.

The adhesions between the dura mater and the bone are weakest in the temporal fossa, and it is for this reason that the artery may be ruptured by a force which is sufficient to detach the dura, yet not so violent as to fracture the bone.

The anterior branch is frequently in a groove,

and it is most often torn as it crosses the anterior inferior angle of the parietal bone.

There often intervenes between the time of the stunning, or it may be insensibility, produced by the original violence a period of consciousness, but this is not always so. Jacobson mentions this as occurring in thirty-two out of sixty-three cases of middle meningeal hemorrhage from all causes. This may last for only a few moments, and can thus be readily overlooked, or it may exist for some hours or even days. This period of consciousness, which finally lapses into coma, is by far the most important symptom, and is, indeed, worth all the other symptoms combined in enabling us to form a correct diagnosis. Paralysis, or rather hemiplegia, may then come on, which gradually extends as the clot increases in size and presses upon the cortical motor centres. If the amount of hemorrhage be small, we may only have evidences of a cortical irritation in the form of convulsive movements of the arm and leg of one side. This cortical irritation was pronounced in one of the cases which I present to-night. There may also be general convulsions. The hemiplegia is usually upon the side opposite to that of the injury; but occasionally the vessel upon the other side of the skull is ruptured by counter-stroke, and then we would have paralysis upon the same side as the injury itself, although I believe there are some very rare instances of paralysis on the same side as the injury when the hemorrhage is extradural.

The pupils may be contracted, due to the concussion of the injury, or dilated, if the clot be large and pressing upon the base of the brain. When one pupil is dilated widely, especially if it be on the same side as the injury, it is of the greatest importance, as showing pressure of a large clot.

The pulse, as a rule, is frequent. Unconsciousness varies with the amount of hemorrhage; it may be deep coma from the first, as in Case II., or the patient may possibly be roused and move the limbs when disturbed. Respiration is slow and stertorous. The temperature rises rapidly to 101°, 102°, 103°, and even 104° F.

Whenever we have a case of injury to the head presenting these symptoms, and especially if there be a period of consciousness between the time of the accident and the onset of deepening coma, it is our duty to trephine the skull and search for the source of hemorrhage. We must be guided in so doing by the localizing symptoms and not by the side of the head upon which the injury has been received.

Weisman (*Deutsche Zeitschr. f. Chir.*, Band xxi. Heft 1-3; Band xxii. Heft 2; there is an extended review of this article in the *Annals of Surgery*, December, 1885, p. 502), who has written the most elaborate paper upon this subject, states that in all instances where we have, first, an interval of consciousness between the concussion and the onset of coma; second, hemiplegia; third, an infrequent and hard pulse; and, fourth, slow and embarrassed respiration, with stertor, whether there be a lesion of the skull or not, even of the opposite side, we must trephine.

He further states that when aphasia is present there is an extension of the clot towards the front, when there are disorders of sensibility there is an extension backward, and if there be paralysis of the third pair the extension is towards the base of the brain.

Mr. W. H. A. Jacobson, in his very elaborate paper in "Guy's Hospital Reports for 1885-86," records the history of eight cases of middle meningeal hemorrhage without fracture of the skull.

Seven of these cases received the injuries by falls upon the head and one by a blow from a loaded whip-handle. All of the cases in which a trephine opening was made in the skull—four in number—recovered (Nos. 8, 9, 10, and 19). In the four cases where death ensued (Nos. 2, 3, 20, and 55) no attempt was made to trephine the skull. In three of the latter cases there was an interval of consciousness after the concussion, lasting for some hours. Coma came on only after the patients were in bed and asleep. In one (No. 55) there was no interval of consciousness, as the man was insensible from the first and died in forty-eight hours. The four cases of recovery, and in which trephining was done, were conscious for a period of time before the pressure-symptoms manifested themselves. In one the vessel upon the opposite side of the head from the point of injury was ruptured by a counter-stroke.

Our object in trephining the skull is twofold: first, to stop the hemorrhage from the ruptured vessel; and, second, to relieve the intracranial pressure from the rapidly-enlarging blood-clot.

The opening in the skull should be made with a medium-sized trephine one and a quarter inches behind the external angular process of the temporal bone, on a level with the upper border of the orbit, for at this point the anterior branch of the middle meningeal artery is most readily exposed.

A rongeur forceps should then be used to enlarge the opening sufficiently to enable us to

find the source of hemorrhage. If no clot or evidence of bleeding is found, another and similar button of bone should be removed upon the same side of the skull, just below the parietal bosse, on the same level; this will expose the posterior branch of the artery.

As it is almost impossible to say whether the clot is extradural or subdural in the same area by the localizing symptoms alone, an opening should always be made in the dura mater to determine this point, provided the clot is not found directly beneath the bone. This dural opening does not materially increase the danger of the operation when all due antiseptic precautions have been followed, and it should be carefully closed by catgut sutures.

When the clot is found it should be removed by a stream of plain boiled water, allowed to flow freely over the part, aided, if need be, by gentle sponging. If the vessel is still bleeding, it should be ligated with catgut.

When there is difficulty in controlling the hemorrhage by simple circular ligation, a curved needle threaded with catgut should be passed beneath the vessel through the thickness of the dura and securely tied.

When the on-coming coma has been slow to develop, it may be due to a rupture of some one or more of the smaller branches of the vessels, and, if so, it may not be possible to directly locate and ligate the source of hemorrhage, and it may only be controlled by packing with gauze.

When the bleeding vessel has been torn off as it emerges from the groove in the bone, it may be necessary to cut away the bone with forceps and, if need be, pack with iodoform gauze.

In a case reported by Dr. Ransohoff (*Annals of Surgery*, 1890, vol. xii. p. 116) secondary hemorrhage occurred, and it was found necessary to ligate the external carotid artery to control the bleeding; this should be done if it is found impossible to control the hemorrhage by packing.

Drainage by iodoform gauze should always be used, as the amount of wound discharge will be very free for the first day or two. Silk-worm-gut sutures are best; it is also best to leave one untied at the point at which the gauze drain emerges; this may be tied when the drain is removed, and complete the closure of the wound.

When rupture of both branches of the artery has occurred, or when drainage from the anterior trephine opening is not sufficiently free, a second opening should be made below the

parietal bosse, and a gauze drain carried from the anterior to the posterior opening.

Dr. J. B. Deaver, in a case of fissure fracture, with rupture of this artery, did this, with most satisfactory results (*Journal of Mental and Nervous Diseases*, February, 1890).

I had thought trephining for hemorrhage from the middle meningeal artery without fracture of the bone a modern procedure, but Mr. Jacobson records a case treated in this manner by Mr. J. Hill on February 27, 1751. The results in this case were so successful that, twenty years after, this man was reported as alive and in good health.

**CASE I.—Middle Meningeal Hemorrhage without Fracture; Trephining; Death; Autopsy.**—The first case which I have to report is that of a man, aged forty-eight, who was admitted to my service at St. Agnes's Hospital on the morning of May 8, 1893. He had fallen down-stairs the night before and struck upon his head. Dr. Theo. Sprissler, who first saw him, was under the impression that his accident was due to some form of cerebral irritation producing giddiness, for there seemed to be no good reason for his fall, and he had had a similar attack some six or eight weeks before. When picked up by his friends he was totally unconscious, and remained so for a few minutes, but soon revived and got upon his feet and walked around the room. Shortly after this—I am unable to state the exact time, but within a half-hour—he became stupid, sank down, and again became unconscious; in this condition he was admitted to the hospital. He could be roused by loud calling and shaking sufficiently to say that he felt very well, but would lapse at once into stupor.

I saw him first at 5.30 P.M., May 8, some eighteen or twenty hours after his accident; there was no evidence whatever of fracture; the pupils were equally contracted; the left eyelid was discolored by extravasated blood, but not so the conjunctiva; there was a bruise just above the left ear.

His breathing was full and labored, with some drawing in of the angle of the mouth on the left side and puffing of the cheek. The left arm and leg were paretic, although he could move them at will. The right arm and leg were in almost constant convulsive movement; these movements were slight, but persistent and unmistakable.

As I had seen him during the temporary absence of my colleague, Dr. J. B. Deaver, I gave general directions and went home. At 10 P.M. I was again called to see him, as his condition had only changed for the worse.

All his symptoms were now pronounced and his temperature had risen to 101° F. Evidently there was intracranial hemorrhage, and delay was no longer permissible.

After the head was shaved and thoroughly disinfected, I deliberated for some time as to my course of action. There was undoubted cerebral irritation on the left side,—probably dural,—as was shown by the convulsive movements of the right side, but there was paralysis of the left angle of the mouth and paresis of the left side. Thinking this might be the chief source of trouble, I removed a button of bone with a one-inch trephine at a point one and one-fourth inches above and one and one-fourth inches behind the angular process of the orbit. The anterior branch of the middle meningeal artery was readily seen; it was intact and there was no evidence of bleeding or clot. The dura did not bulge, but I opened it with a small semicircular incision, and by so doing liberated a large quantity—at least one ounce—of clear cerebro-spinal fluid. The dura was much thickened; the cerebral convolutions appeared normal, although the vessels of the pia were somewhat enlarged. The opening in the dura was then united by catgut sutures and the wound in the scalp closed.

I now trephined at a corresponding point on the left side of the head, and upon removing the button of bone a large clot was at once apparent. The anterior branch of the middle meningeal artery was seen to be ruptured and was bleeding freely in little sprits. At least one ounce of dark, clotted blood escaped and welled up from the deeper parts of the skull. The opening in the bone was enlarged with a rongeur forceps sufficiently to enable me to pass a catgut suture under the bleeding vessel and through the dura, thus effectually arresting the hemorrhage. There was some free bleeding from the edge of the bone, but packing with iodoform gauze arrested this readily.

The cerebral irritation improved at once, the convulsive movements ceased, and he reacted quite well from the shock of the operation. He soon began to weaken, however, and gradually sank until his death at 11 P.M., May 10, 1893, forty-eight hours after the operation and seventy-two hours from the time of the accident.

A post-mortem examination was made at 11 A.M., May 11, 1893, just twelve hours after death. The head alone was examined. The wounds were in good condition; that of the right side contained a small organizing clot; that on the left side showed the iodoform

packing and a small clot. The scalp was slightly œdematous. On opening the cranium, the dura mater was found adherent to the under surface of the skull in several places, and at many points adherent to the cerebral convolution; especially was this the case along the superior longitudinal sinus about the region of the leg-centre. The vessels were injected and full of blood. The brain was soft and, with the pia mater, much inflamed. Over the region of the arm- and face-centre, on the left side, was a mass of lymph. The left ventricle was full of dark, blood-stained fluid: There had been a small hemorrhage into the anterior horn of the right ventricle, and in the velum interpositum a hard clot the size of a small pea. I now learned from Dr. Sprissler, who was present at the autopsy, that four weeks before, the man had had a slight stroke of paralysis; he staggered, swayed to and fro for a moment, and then fell unconscious. From this he gradually recovered, but there had been no recovery of consciousness, followed by relapse into unconsciousness, as in the present instance. The cerebellum was soft and congested; the anterior branch of the middle meningeal had ruptured.

Although results, so far as the recovery of the patient was concerned, were bad, the diagnosis of meningeal rupture was confirmed by operation, and had the extent of the former injury been less his chances of recovery would have been good.

CASE II.—*Extensive Hemorrhage from both Branches of the Middle Meningeal, without Fracture.*—(This patient was under the care of Dr. W. W. Keen, and through his kindness I am able to present it to-night.) A man aged fifty was admitted to St. Agnes's Hospital at 6.30 A.M. on June 30, 1892, having fallen, a few minutes before, from a hay-loft, striking on the top of his head. When Dr. Keen saw him at 7.30 A.M. he was entirely unconscious, with puffing respiration, 38 to the minute. The lungs were filling with mucus, and the pulse was 100 and of only fair quality. The left pupil was slightly more dilated than the right and rather more sluggish in its reaction to light. In the middle line of the head, at the vertex, was a lacerated scalp wound 2.5 inches long, and slightly to the left of the middle line, over the occiput, another similar scar one inch long. In neither of these wounds was the bone exposed. An incision revealed the fact that there was no fracture. The patient did not move at all, excepting during the making of these incisions, at which time he moved the trunk a little uneasily, but

did not move the extremities. He had had, slight bleeding from the left nostril, but no discharge of cerebro-spinal fluid from the nasal cavity, nor any discharge whatever from either the mouth or the ears. Dr. Keen therefore felt that fracture of the base could be excluded; fracture of the vault was excluded by direct examination; and although there was no history as to whether any lucid interval had existed between the fall and the unconsciousness, it seemed to him that the cause of the trouble could only be rupture of the middle meningeal artery, and based his diagnosis of the side on which to expect the lesion upon the state of the pupils. Accordingly he trephined at a point one and a quarter inches behind and one inch above the external angular process. The instant the button of bone was removed a dark clot exuded, and so rapidly as to leave no doubt that it was a very large one. As rapidly as possible the bone was gnawed away, upward and backward, with a rongeur forceps, when he found an enormous clot, extending from two inches from the middle line down to the base of the brain, and from one-half an inch back of the external angular process to the occiput. On turning out this clot the anterior branch of the middle meningeal was seen to be ruptured and bleeding at two points,—one a little below the opening and the other a little higher up,—and the posterior branch was likewise ruptured at two points; all four of these were secured by ligatures passed through the dura. The condition of the patient when first seen was very doubtful as to recovery. He died a few minutes after the vessels were secured.

Here the amount of violence inflicted by the fall was too great to permit of benefit from operative interference, as both branches of the artery were ruptured and the amount of hemorrhage and injury to the brain so excessive that recovery was impossible.

For Case III. I am also indebted to Dr. Wharton Sinkler and Dr. W. W. Keen for permission to report, and also for the pleasure of seeing the patient with the latter and Dr. Cross, of Jenkintown.

Although this is not a case of meningeal, but one of subdural hemorrhage, the symptoms were such as to lead us to suppose that the former condition was present.

CASE III.—*Intracranial (Cerebral) Hemorrhage, involving the Fibres from the Cuneus, and producing Hemianopsia.*—This patient was a slender woman of sixty-five, who had been ailing from grippe and its sequels for about two years, and who had been recently subject

to attacks of vertigo. On December 28, 1893, when going up-stairs, she fell backward from near the top of the flight, striking on the back of her head. There was no cut, nor any lump, and the only way in which the presumed site of the blow could be fixed was by her wincing when pressure was made over the *right* occiput, and also the unconscious movements of her right hand to that spot, which seemed to give her discomfort. She was picked up unconscious and put to bed. The next day Dr. Cross noticed, in examining her pupils, that when a candle was carried to the *left* of the middle line she followed it, although she was not conscious enough to make known sensations or manifest desires. When the light was carried to the right of the middle line she did not follow it. This was several times repeated, so that Dr. Cross judged that she had hemianopsia, the right half of the field not being seen. There was no paralysis at first, but gradually, in about thirty-six hours after the accident, she became comatose and did not move any of her extremities.

When we saw her, at the request of Dr. Cross and Dr. Sinkler, who had been called in consultation with Dr. Cross, the chest had filled up with mucus and she was evidently dying. It was decided, therefore, to do nothing, and shortly afterwards she expired. The diagnosis was a clot of blood, probably extradural, from the middle meningeal, or possibly subdural, and involving fibres from the cuneus.

*Post-Mortem.*—I had the good fortune to make the post-mortem examination fourteen hours after death. The head only was examined. There was no evidence of her having struck over the right occiput, so far as the condition of the scalp and underlying tissues would show. The middle meningeal was not ruptured. The meninges were in the early stages of inflammation. A clot of blood nearly as large as an egg was found in the cortex corresponding to the left parietal eminence, and extending deeply into the cerebral substance, so as to involve the fibres from the left cuneus.

*Remarks by Dr. Keen.*—"When I first saw the patient, Dr. Cross's very shrewd and accurate observation of the fault of vision put us on the right track for the proper surgical treatment had the patient been in suitable condition. The right half of each field being blind, the left half of each retina was the blind portion, these two being supplied from the left cuneus. Had we followed the indications of tenderness over the right occiput and her apparent annoyance

from some trouble at this point, as shown by her unconsciously putting her hand there, we should have been led far astray. Basing the diagnosis on cerebral localization, I should have trephined, as I said to Dr. Cross and Dr. Taylor, at a point immediately below the left parietal eminence, in order to reach the posterior branch of the middle meningeal, which I deemed most likely the ruptured vessel.

"The post-mortem makes it more probable that the rupture of the blood-vessel resulting in the cortical clot was the cause and not the result of her fall. The location of the clot, however, was correctly diagnosed, although its source, of course, could not be absolutely known. The point at which I should have trephined would have been the correct one; but, in view of the origin and size of the clot and of the patient's age and feeble condition, it is very doubtful whether she would have recovered, even had operation been done immediately after the accident. Had the clot been in the ganglia at the base of the brain, as is more common in ordinary cerebral apoplexy, there would have been, of course, a hemiplegia. This rendered the diagnosis of rupture of the middle meningeal posterior branch the more likely one."

116 SOUTH EIGHTEENTH STREET.

#### *THERAPEUTIC NOTES ON WHOOPING-COUGH.*

READ BEFORE THE PENNSYLVANIA STATE MEDICAL SOCIETY,  
MAY 18, 1894.

BY W. C. HOLLOPETER, A.M., M.D.,

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THE prevalence of an unusually severe epidemic throughout our city and the chaotic state of our therapeutic measures are my reasons for this brief paper. The therapeutics of whooping-cough is boundless, and, like phthisis and diphtheria, it covers nearly the whole domain of the Pharmacopœia. This fact alone assures me that we, as yet, have found no specific for it. Those remedies most in vogue are the antispasmodics and the germicides, and they have all been faithfully tried one after the other, and, to a certain extent, seem to have some value. It is not my purpose to enumerate the various remedies that have been used and have become exalted because they have found favor in some practitioners' hands.

We want a specific for this specific disease, for such I regard it, and I feel sure that it will be found among the two classes I mentioned

above,—the antispasmodics and the germicides. Whooping-cough is an exceedingly fatal disease; by most authorities regarded the most fatal of all the diseases of children under one year. The fatality, however, is not limited to the first year of life alone; it continues to manifest itself long after this period, in broken health of all kinds referable to the respiratory, intestinal, as well as the various glandular, organs. I am sure we are all familiar with the more severe sequelæ of whooping-cough. The emaciated child suffering from gastro-intestinal catarrh of a chronic type, the various cheesy glands, the acute or chronic nephritis, the purulent otorrhœa, the chronic bronchitis, the broncho-pneumonias, and pleurisies go to form a goodly portion of our every-day routine practice; and all of these come to us because of the widely-mistaken idea that we can do but little, if anything, in the cure of the original disease. I am at a loss to know why the majority of people regard this disease so lightly,—that it is harmless, that it is self-limited, and does not require any remedial measures,—unless our treatment in the past has been so unsatisfactory and so unscientific! Again, I believe this unsettled state of affairs among the laity as to its incurability is traceable to our own actions in our careless and slovenly manner in the general management of the disorder.

This is not the place to discuss the etiology of the disease, yet this much seems necessary to the correct understanding of the subject. Whooping-cough has a striking parallel to diphtheria, in that it has in its early stages a local manifestation. It has a strong tendency to fasten itself on the throat. How long this period exists I do not know to a certainty; no more than we know just how long diphtheria is purely a local throat poison; yet there is a period in whooping-cough, as there is in diphtheria, long or short, in which the virus—if it could be recognized—could be destroyed and the disease cut short. Aborting cases thus within two weeks—and it is not unusual—explains the number of reported cures made by germicidal remedies. I have notes of two cases which I can recall in which the characteristic whoops commenced at once with the general catarrhal symptoms and were cut short by a hydrogen peroxide gargle. I think these two cases illustrate very strongly the fact that the germs of the disease will locate in part on the mucous membrane of the respiratory passage, and bring about a nerve discharge which ends in the characteristic whoop. In my treatment of this disease I find the greatest necessity in recognizing the nature of the trouble

early in the catarrhal stage. If I can satisfy myself that I am dealing with a case of pertussis, my methods of procedure are much different from what they would be if the case were well advanced. We must remember that the two stages are not sharply defined. We have many cases without the catarrhal stage at all, as we have many cases that do not whoop. Children under one year with the disease do not whoop, as a rule, and older children do not always possess the catarrhal indications, yet may whoop vigorously at the very outset of the disease.

The anatomical structure of the infantile larynx under all catarrhal inflammation is convulsive and suggests the nervous mimicry so very difficult of recognition.

The early diagnosis of the disease is of vast importance, as upon it depends the success of the treatment.

The diagnostic point prior to the whooping stage, enunciated by Eustace Smith,—viz., “If the child be made to bend back the head, so that his face becomes almost horizontal and the eyes look straight upward at the ceiling above, a venous hum, varying in intensity according to the size and position of the diseased glands, is heard with the stethoscope placed upon the upper bone of the sternum. As the chin is now slowly depressed, the hum becomes less loudly audible, and ceases shortly before the head reaches its ordinary position,”—has not been very satisfactory. It is true that we do not recognize the hum made thus by the enlarged bronchial glands, but it occurs long after other symptoms are manifest, thus vitiating the importance of this particular symptom.

I have for several years been able to place considerable value on the peculiar puffiness of the mucous membrane of the eyes and the swollen or oedematous condition of the whole face, almost dusky; this condition may exist for days before the catarrhal symptoms have extended throughout the respiratory mucous membrane. The cough at this stage may not be at all suggestive; it may be, in fact, purely bronchial. This symptom of fulness about the eyes, which is quite as constant as in measles, would, in fact, suggest measles as well as pertussis, and with measles it is closely associated and must be differentiated. As we are able to diagnose measles by their appearance first on the hard palate, so I contend we may diagnose whooping-cough, in its earliest stage, by the characteristic swollen condition of the eyes and face. I insist upon this factor as of the greatest importance, as its recognition will en-

able us to institute specific treatment early when the disease is yet local and may be brought more speedily under control. During the last five years I have had under my control upward of two hundred cases of whooping-cough. Of the majority of these cases I kept an indifferent clinical record, from which I deduce the results embodied in this paper. Pertussis, as we all know, is a notoriously unsatisfactory disease to manage, and if we put our whole confidence on a single remedy we are likely to meet with keen disappointment; thus the good reputation as well as the disgrace of a drug comes about. The drugs I have found most efficient in the catarrhal stage have been hydrogen peroxide in sterilizing the naso-pharynx, and assafoetida occasionally used for the paroxysms. Belladonna, also, is to a high degree beneficial in young children, and should be placed first. This I push until I get the full toxic effects, when I am generally rewarded with less of the suggestive characteristics of the cough.

To be more explicit, I will detail the methods of procedure in a family in which I have instituted my idea of thorough treatment. A child of four years attending kindergarten was brought to me with a suspicious cough. The history was given of an exposure of over two weeks prior. The child coughed for a few days, more at night, was feverish during the evenings, with slightly swollen eyelids, this suggesting the nature of the impending trouble. I ordered hydrogen peroxide and pure glycerin, equal parts; this was well diluted and thoroughly sprayed through the naso-pharynx every four hours. The diet was light and digestible; out-door life was encouraged, except on windy days. All excitement was avoided, so as not to precipitate any additional paroxysms. At night the child was placed in a large, well-ventilated room, and over its cot was erected a mosquito-netting, so as to prevent any unusual draught. This procedure I have found highly beneficial, as it materially lessens the number of the nocturnal paroxysms. When the cough was fully established and was accompanied by eructations of stringy mucus, I commenced the exhibition of *mistura assafoetida*,  $\frac{1}{2}$  drachm every two hours. The record of the paroxysmal stage was as follows: First week averaged six coughing spells per day; second week averaged ten spells per day; third week, four paroxysms; and fourth and fifth weeks averaged about two paroxysms during the twenty-four hours. When the younger brother, but eight weeks old, commenced to show evidence of the disease, I first used hydrogen peroxide, as in the older brother,

and immediately followed it with *assafoetida*. This case continued scarcely four weeks, when all symptoms subsided. *Mistura assafoetida*, however, is oftentimes disappointing, even in younger children. My second choice would be tincture of belladonna exhibited in 1-drop dose for every month of the child's life, rapidly ascending doses until toxic effects are reached, after which gradually increasing the doses as tolerance of the drug seems to be established. In very young children I have obtained good results from the use of a freshly-prepared belladonna-plaster placed between the scapulæ. The physiological action of the drug seems to be more constantly maintained; this may be changed at the end of one week. In a number of very troublesome cases in young children I have gained decided advantage by an application of two-per-cent. cocaine solution directly applied to the naso-pharynx.

This treatment does not preclude the use of hydrogen peroxide, which is continued throughout the catarrhal stage. Bromoform was resorted to in fully twenty per cent. of my cases, and was a keen disappointment; it seemed merely to stupefy the patient and did not apparently shorten the progress of the disease. The coal-tar products pushed to toxic doses modified the cases but slightly. Belladonna and antipyrin in combination gave better results than either alone. Quinine, chloral, creosotum, and carbolic acid I found of but little practical use, owing largely to difficulty in administration. This brief outline of the drug treatment in whooping-cough has reference solely to the catarrhal and paroxysmal stages of the disease. As important adjuncts to the management of the disorder, careful hygiene must be enforced, diet of the simplest character, and a uniformly quiet life. Throughout the whole course of the disease out-door life, so far as possible, should be encouraged, and, if convenient, a sojourn at the sea-shore will shorten the progress of the trouble and limit to a great extent the number of sequelæ.

In conclusion, I wish to invite professional attention to *three* very important factors in the treatment of whooping-cough:

1. The early recognition of the disease before the spasmodic stage, suggested by puffiness under the eyes. Then hydrogen peroxide, or possibly cocaine, applied locally. In very young children the treatment is sometimes abortive.
2. The use of belladonna pushed to toxic effects in the second stage is very valuable.
3. Out-door life, sea-shore the best, if the foregoing are not effective.



*TWO CASES OF TRAUMATIC CATARACT  
IN CHILDREN; EXTRACTION;  
SUCCESSFUL RESULTS.*

BY JAMES MOORES BALL, M.D.,

Professor of Ophthalmology and Otolary in the St. Louis College  
of Physicians and Surgeons; Corresponding Member  
of the Medico-Legal Society of New York.

RECENTLY two cases of traumatic cataract occurring in children have been under my care. Both cases were kindly referred by Dr. W. E. H. Bondurant, of Downing, Mo.

**CASE I.—Traumatic Cataract; Extraction of Lens; Successful Result.**—J. H., boy, aged nine, was struck in the eye by a needle, which pierced the cornea near its centre and entered the lens. Opacity of the lens developed gradually, the lens substance protruding through the puncture into the anterior chamber, forming a rounded mass with a well-defined pedicle. Four days before consulting me inflammation developed; the eye became hard and painful. A careful examination under atropine and oblique illumination showed the condition described above.

Here was a case in which the classical operation for traumatic cataract—viz., linear extraction—was evidently out of place. Much of the lens was not softened; nevertheless, the eye showed increased tension, and this, unless soon relieved, would destroy vision. Since it was evident that the greater portion of the lens could not be removed by the linear method, I immediately made an extraction, passing a Graefe knife at the apparent corneo-scleral junction and severing about two-fifths of the circumference of the cornea. The lens was then extracted through a natural pupil, the eye dressed antiseptically, and the dressing kept constantly moist with a solution of bichloride (1 to 3000). Healing followed rapidly, and at the end of sixteen days the boy's vision in the affected eye equalled  $\frac{1}{10}$ .

**CASE II.—Traumatic Cataract; Extraction; Great Loss of Vitreous; Successful Result.**—A few weeks after the discharge of Case I. another boy, aged eleven, was brought to me with the statement that the thorn from some kind of a "creeper" had injured the eye a few weeks previously. Examination showed a congested conjunctiva, a faint corneal opacity marking the point of injury, dilated vessels in the pericorneal zone, the anterior chamber almost obliterated by the pressure of a swollen lens, and great increase of intraocular tension. The eye had been painful for three days. At the time of the accident and for several weeks following there was no pain.

This was a case for linear extraction, and yet I was sure that much of the lens was still unsoftened and could be removed by the linear operation with great difficulty, if at all. Consequently, I again used a Graefe knife, great care being taken lest the knife pierce the iris and cut out a section of that diaphragm. The section was made as in the previous case, with this difference, that the line of incision was about one millimetre in advance of that in Case I. The greater part of the lens was softened and followed the knife. I was gently pressing with the cataract-spoon opposite the incision and working out some fragments of cortical matter, when suddenly there was a gush of vitreous. Immediately the protruding vitreous was cut off with scissors, only to be followed by more and more vitreous. The speculum was removed, the lids gently but firmly closed, and an antiseptic dressing applied. It was feared that infection might take place, owing to the fact that a large bead of vitreous was necessarily left between the lips of the wound. The following morning the corneal wound was found to be closed, the anterior chamber restored, and the conjunctival cul-de-sac filled with floating beads of vitreous. The pressure had cut off the extra- from the intraocular vitreous. The case progressed favorably, and at the end of the fifteenth day the child's vision equalled  $\frac{1}{10}$ .

*THE DYSPEPSIA OF STRUMOUS CHILDREN AND ITS TREATMENT.*

READ BEFORE THE SECTION OF MEDICINE AT THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, BRISTOL, 1894.

BY W. SOLTAU FENWICK, M.D. (LOND.), M.R.C.P.,  
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DR. T. J. TODD\* was the first to describe the clinical features of a variety of dyspepsia which commonly occurs in strumous subjects, and his observations were fully confirmed shortly afterwards by Sir James Clark.† Of late years the complaint has attracted but little notice, and modern writers are content either to quote the opinions of the last-named observer or to dismiss the subject with the remark that dyspepsia is prone to attack scrofulous children. The complaint is encountered in a modified form in almost every child who presents the general features of the tubercular

\* "Cyclopaedia of Practical Medicine," art. "Indigestion," vol. ii. p. 649, 1833.

† "Pulmonary Consumption," p. 16, 1835.

diathesis, but it is rare for the disorder to prove so severe as to claim the exclusive attention of the medical practitioner. I find that among two thousand cases of disease in children which have come under my care during the past twelve months at the Evelina Hospital, thirty-two were brought to me solely on account of the disease in question, and it is from observations made on these cases that the following remarks have been compiled:

*Sex and Age.*—Girls appear to be more subject to the complaint than boys, for among my thirty-two cases no fewer than twenty-six were of the female sex. The disorder may exhibit itself at any time between the fourth and fourteenth year of life, but it is most common about the age of five.

*Family History.*—In the vast majority of the cases the patient exhibits a strong family tendency to tuberculosis. Thus, in twenty-two instances (sixty-six per cent.) it was found that one of the parents had suffered from phthisis, the father more often than the mother. As a rule, one or more members of the patient's family present evidences of the strumous diathesis. In twelve cases I found that one of the other children was the subject of enlarged cervical glands, or possessed scars or other signs of disease of the lymphatic system or the bones.

*General Appearance.*—The digestive disorder affects all varieties of the so-called scrofulous temperament, but the children who possess the finer and more delicate cast of features prove the most frequent sufferers. In addition to the general appearance indicative of the strumous diathesis, some local manifestation of scrofula is occasionally encountered. Chronic enlargement of the cervical or submaxillary glands was only noticed in two cases, but in three others typical scars were observed. Chronic inflammation with hypertrophy of the tonsils existed in ten, and phlyctenular ulcers of the cornea in five cases, but tubercular disease affecting the long bones or joints was never observed. Otorrhœa was present in six instances, and many of the children suffered from muco-purulent discharges from the vagina or nose, without any obvious disease being detected in these organs. Anæmia was invariably present, and the digestive derangement seldom underwent any decided improvement until the conjunctivæ and the mucous membranes began to regain their normal color.

*Symptoms and Progress.*—Pain in the abdomen constitutes one of the most constant and characteristic features of the disease. It is usually quite sudden in its onset, and is apt to occur at irregular intervals. As a rule, the at-

tack occurs during the early part of the evening or night, but occasionally its advent is postponed until two or three o'clock in the morning. The majority of the cases also suffer from a recurrence of the pain during the course of the day, especially just before breakfast and about noon. In twenty-three, or about sixty-nine per cent., of my cases the ingestion of food was also followed by an attack, and the patient was often obliged to hurry off to the closet, owing to a sudden and urgent call to relieve the bowels.

The umbilical region is the part of the abdomen to which the pain is usually referred, though occasionally other districts are also affected. The symptom partakes of the nature of a twisting or cutting sensation, and it frequently appears to commence a little to the right and above the navel and to proceed transversely across the abdomen from left to right. Occasionally the hypogastrium is the chief seat of the suffering.

The pain may prove severe from the very commencement of the attack, but it generally grows more and more intense until a maximum is attained, after which it gradually declines. Sometimes the expulsion of a large quantity of gas, either by the mouth or the rectum, is followed by more immediate relief. The actual duration of the pain varies from five minutes to several hours. The nocturnal attacks are the most severe and endure the longest; but when the disease is undergoing cure their duration is much curtailed, and the attacks are eventually replaced by momentary twinges.

The affected region of the abdomen is sometimes slightly tender on pressure, but more commonly firm manipulation affords relief, and very often the child will spontaneously press both its fists or even the corner of a chair into the abdomen when the seizure occurs.

There are certain conditions which appear to favor or even excite an attack of this nature. Constipation is a frequent concomitant symptom of the disease, and it is usually noticeable that the pain is aggravated by the presence of an overloaded colon. When the attacks follow the meals, they occur quite irrespective of the quantity of the food nourishment which may have been taken, but warm liquids or spiced foods are more active in the production of the symptom than other varieties.

Exhaustion from want of food and physical and mental fatigue are all potent factors in the causation of the disease.

The condition of the appetite varies considerably. Occasionally the desire for food is insatiable, but more often the appetite is poor

and exceedingly capricious, and the child is apt to develop peculiar distastes for certain articles of food. Meat fat in general is particularly repugnant to many of these patients, and I found that no fewer than eighty-seven per cent. of my cases were unable to eat this substance without experiencing nausea, acidity, vomiting, or suffering from an attack of biliousness. This dislike is sometimes so intense that the mere sight of fat gives rise to a feeling of nausea. Bacon fat, on the contrary, is sometimes eaten with pleasure, and milk, cod-liver oil, and glycerin are easily tolerated. It is also noteworthy that thirty per cent. of the cases of this disorder disliked sugar in any form, and the mother usually stated that saccharine substances made them bilious. In a few instances it was stated that the child was extremely fond of bitter and sour materials, and especially lemons and vinegar.

Thirst usually constitutes a prominent feature of the disorder, and was present in sixty-three per cent. of the cases. The sensation is chiefly complained of at night, and the child will often get out of bed and search for water, and in one instance I was informed that the dirty contents of the hand-basin had been imbibed in the absence of clean water from the room.

*Constipation* was complained of in twenty-two, or sixty-seven per cent. of the entire number. In some cases the torpid action of the bowels had existed throughout life, but, as a rule, this symptom had only shown itself for the first time shortly before the onset of the pain. The stools are pale and fetid, and usually consist of a kind of putty- or mortar-like substance, but occasionally they are hard and knotty, or they present the appearance of slime. On careful examination of the evacuated material, large quantities of undigested food can be discovered, with a remarkable absence of bile pigment, appearances which appear to justify the frequent remark of the nurse to the effect that the food goes through the body unchanged.

In ten cases, or one-third of the entire number, the bowels were stated to be irregular in their action. In many of these it was a constant complaint that as soon as a few mouthfuls had been swallowed the child was attacked with pain in the abdomen and had to hurry off in order to pass a motion. This sequence of events ensued after every meal, and was a cause of great annoyance both to the patient herself and to her parents. The evacuations in these cases are usually semi-solid in character, and frequently give rise to a sensation of heat or scalding at the anus, or tenesmus accom-

panies the act of defecation. Occasionally the abdominal pain subsides without an evacuation of the bowels.

Under ordinary circumstances, nausea and vomiting are seldom complained of, and flatulence and acidity are equally rare.

Although there may be no actual loss of flesh, the child remains thin and anæmic and never seems to gain ground. The skin feels harsh and dry, but profuse perspiration is apt to occur suddenly during the night. The hands and feet are habitually cold and blue in color, and are liable to chilblains. Sleep is much disturbed by dreams, and the child often talks wildly, gesticulates, or grinds the teeth while it dozes. The urine is usually pale in color and may deposit a considerable quantity of phosphates. The tongue is generally clean and of a darker color than normal, but occasionally it appears to be veiled by a coating of thin white fur, through which the papillæ show themselves in the form of vivid red spots.

From time to time the symptoms are apt to be replaced by others arising from an attack of subacute gastritis. When this disorder supervenes, the child usually awakes in the morning with frontal headache and a foul taste in the mouth and complains of severe nausea. The appetite is in abeyance, but there is great thirst. The face appears pale and puffy and there are dark lines under the eyes. The breath smells sour, the dorsum of the tongue being thickly coated, while the tip and edges are bright red. Aphthæ may appear on the gums and palate. The pulse may be quickened and the temperature slightly raised, but the pyrexia is generally insignificant. Retching or vomiting follows every attempt to take food. There may be acidity and flatulence, and diarrhoea is the most common complication. In some cases, however, obstinate constipation is encountered. The quantity of urine is diminished and it deposits amorphous urates.

These catarrhal attacks are apt to occur every few weeks, and usually last four or five days. I have noticed that they are very liable to occur when dry and mild weather has succeeded a spell of dry northeast wind. In a few cases certain articles of diet have appeared to be responsible for the attack, and I have several times heard it stated that a little fat eaten was responsible for the biliousness.

After puberty the various symptoms usually subside, save for occasional attacks of gastric catarrh. In some instances, however, the disease undergoes a slow form of evolution, and the stomach rather than the intestine eventually becomes the seat of the disorder.

*Etiology.*—In the absence of post-mortem evidence it is only possible to offer a general surmise as to the origin of the complaint and its various symptoms. Todd considered that the dyspepsia was caused by a deficient secretion of the bile, whereby the processes of digestion and assimilation of food in the duodenum were permanently hindered. Although there can be no doubt that this explanation is partly correct, since the symptoms indicate a defective biliary secretion, there are reasons for believing that the liver is not alone at fault. The peculiar situation of the abdominal pain and its character suggest that this symptom arises from an irregular and spasmodic contraction of the colon, a supposition which is confirmed by the fact that in many cases the pain is immediately followed and relieved by an evacuation of the bowels. But, unlike ordinary cases of colic, the symptom does not seem to arise from ingestion of irritating material, nor does it depend entirely on an overloaded condition of the colon. On the contrary, it is most readily excited by such conditions as mental and physical exhaustion, which act through the central nervous system, or by a process of reflex irritation, as when food is introduced into an empty stomach. The sudden and violent peristalsis which is induced in these various ways tends to curtail the period of gastric as well as intestinal digestion, and to hurry the food through the bowel before it has had sufficient time to undergo the necessary digestive changes. It is well known that the tubercular diathesis is closely associated with various forms of neurosis, and it is not, therefore, unreasonable to suppose that the subjects of this disorder may occasionally exhibit an extreme irritability of the nervous mechanism of the digestive tract, which will show itself in the form of sudden and painful peristaltic waves. I am therefore inclined to regard the dyspepsia which is prone to attack strumous children as a neurosis of the digestive tract rather than as a functional disorder of the stomach.

*Treatment.*—The predisposition to tuberculosis exhibited by these patients requires special precautions with the view of maintaining the general health. The child must be warmly clad, and exposure to cold and damp always carefully avoided. Wool should always be worn next the skin, even at night, when a flannel suit should take the place of the usual night-dress. Tepid baths of salt water are always useful in maintaining a healthy action of the skin, and regular but not excessive exercise in the open air should be advised.

Sea air is particularly beneficial in the treat-

ment of these cases, and a few months' residence at Margate, Ramsgate, or Dover, or some other health resort on the east or south-east coast, is often followed by marked improvement. The more relaxing atmosphere of the south of England, on the other hand, is seldom suitable for the subjects of this disorder, owing to the tendency to gastric catarrh, or biliousness, which the climate appears to evoke.

The selection of an appropriate dietary seldom presents any difficulty. All articles of food which contain a large percentage of indigestible material should be avoided; hence vegetables should be either avoided or given sparingly. White fish, chicken, and tender meat are to be preferred to the coarser and richer varieties, and all condiments and highly-spiced foods should be forbidden; on account of the excessive peristalsis which their ingestion is liable to evoke.

Milk and cocoa may be given freely, but coffee and strong tea must be prohibited. Alcohol is seldom desirable, and the constant resort to brandy as a means of relieving pain is strongly to be deprecated. When improvement has set in, a little bitter ale or stout at meal-times is often of service, but these beverages seldom agree in the early stages of the complaint. The meals should be taken at regular hours, and it is often wise to give bread and milk, tapioca, gruel, or other light food about half an hour before the child retires for the night.

The most prominent indication for medicinal treatment consists in the regulation of the bowels. Todd recommended small doses of gray powder for this purpose, followed by a mild course of hepatic stimulants, such as rhubarb, taraxacum, and nitrate of potassium. From my own experience I am inclined to regard these remedies as being chiefly of value when the tongue is thickly coated and nausea is a prominent symptom. As a rule, I have found the extract of cascara sagrada far the most reliable drug in the treatment of the constipation, and usually commence by the administration of 10 to 15 minims of the fluid extract along with a drachm of malt extract night and morning. Occasionally small doses of aloin and nux vomica answer well, or some simple laxative, such as senna and sulphur or the compound powder of licorice, may be employed with advantage. Drastic and saline purgatives had better be avoided, since the exhaustion which is apt to follow their administration increases the tendency to attacks of pain.

When the bowels are moved at each meal, sedatives should be employed to remove the extreme irritability of the intestine, and small doses of nepenthe, compound tincture of camphor, or a solution of morphine may be given in combination with carbonate of bismuth or aromatic sulphuric acid. In other cases the compound ipecacuanha powder may be substituted for the sedative draught.

As soon as the bowels have been brought into a satisfactory condition an attempt should be made to improve the quality of the blood, for as long as anæmia exists the disease is seldom amenable to treatment. The tartrate, carbonate, or ammonio-citrate of iron are to be preferred to other preparations, and occasionally the exhibition of the drug in the form of the compound iron mixture of the Pharmacopœia is attended with success. The medicine must be administered after meals, and a few drops of tincture of nux vomica may be added to it after a time, should the appetite remain poor.

Cod-liver oil is seldom of use in the early stages of the disorder, but as soon as the pain has subsided it may be cautiously employed and the dose gradually increased. If the crude oil produces nausea, the malt extract with cod-liver oil is often of extreme value.

When the symptoms of gastric catarrh present themselves in a child, it should remain in-doors and, if necessary, be confined to bed. The diet should consist entirely of milk, milk and soda-water, beef-tea, thin soup, bovril, or beef essence. Small doses of mercury with chalk may be administered every evening for two or three days, followed next morning by some saline purgative. At a later period an alkaline medicine with or without taraxacum or rhubarb may be given once or twice during the twenty-four hours. If the digestion remains feeble after the attack has passed off, the exhibition of the mineral acids is usually of service.

#### ON THE USE OF BELLADONNA IN LAYING IRRITATION AND HEALING CERTAIN SKIN-DISEASES.

A PAPER READ BEFORE THE SECTION OF DERMATOLOGY,  
BRISTOL, ENGLAND, 1894.

BY ELIZA W. DUNBAR, M.D. (ZURICH).

**B**ELLADONNA does not seem to have been much adopted as a specific remedy in skin-diseases. It does not take in this respect, either in general or special practice, a place like arsenic or sulphur. Authorities on therapeutics disregard for the most part any

particular action of the drug in skin-eruptions, and such exceptional notices as may here and there be found touch on its anodyne properties or its being an assistant in securing the action of the intestines, and not at all on its being an agent by which reddening, thickening, and irritation may be subdued. Although bromide of potassium has its place in lists of well-authorized remedies in various skin-complaints, belladonna may be looked for in vain, either in the lists attached to a work so much up to date as "Martindale's Extra Pharmacopœia," or Squire's last edition of the "Companion to the British Pharmacopœia." Even Ringer, to whom Professor Lauder Brunton in his list of remedies attributes a recommendation of belladonna in skin-affections, gives it no place in his own lists of remedies for eczema, prurigo, pruritus, urticaria, or any kind of dermatitis.

The virtues of belladonna in the direction I have indicated became first known to me in the autumn of 1892, in the treatment of a case of dermatitis exfoliativa. The patient was a lady eighty-nine years old. The affection showed itself first in the face and neck, and spread all over the body, and was accompanied by intense and constant itching and by free and flaky desquamation. She had attacks of gout, and, among various remedies tried, a mixture of wine of colchicum and antimonial wine served to render the affection just bearable to the sufferer. Bromide of potassium failed to give any relief to the continuous irritation. Of external applications, starch powder was alone tolerated. As most remedies seemed to irritate rather than alleviate, my *locum tenens* kindly continued my treatment during my holiday absence, and did not change it until a day or two before my return, and not until, all parts of the skin having been invaded, there was none left to attack, and the process had declined everywhere in severity. I found the skin still very imperfectly healed, reddened and infiltrated, and there was much itching, though not quite so constant or severe.

The mixture of bark and arsenic that had been prescribed, and of which two or three doses had been taken, I directed to be continued, with the result that the whole process revived in all its original severity. Then, because belladonna was antagonistic to opium and because opium caused itching, I prescribed tincture of belladonna in 15-minim doses every six, eight, or twelve hours. Relief was almost immediate. The irritation was subdued, the skin began to heal, and in a few days the malady that had lasted nearly two months

had almost disappeared. Such slight relapses of itching as occurred were speedily allayed by the renewal of the remedy. This experience made clear to me what was the curative agent in a very obstinate case of prurigo, which had finally got well by taking a medicine for a cough, of bark, belladonna, and ammonia. I had strangely until then overlooked the belladonna, though I had found in giving bark alone that the prurigo had become worse, and I had returned to the first prescription in its entirety and with satisfactory result.

I have tested the influence of belladonna as occasion offered in such cases as exhibited irritation of the skin,—in all, thirty-five cases that I can remember,—and have found the drug curative or alleviating in thirty cases,—that is, about eighty-five per cent. With a larger number I could not hope for so large a percentage, but I should consider even fifty per cent. good.

It would be tedious to give details of every case, but I will give outlines of the more striking. The first was one of urticaria, recurring very frequently during several years. The affection is well described by the patient herself as red patches mottling the skin of the head and neck in the slighter attacks, and in the more severe form as white spots or wheals on a bright scarlet surface, the eruption of which is preceded by an intense irritation and feeling of fulness and oppression, with intense throbbing in head and neck, the immediate cause—still nearly in the patient's own words—being mental and emotional excitement, hot articles of food, pepper, curry, etc., hot baths, unusual bodily exertion, such as running, tennis-playing, walking up-hill. Half a drachm of tincture of belladonna daily so far relieved the symptoms that in a month a hot bath could be taken without inconvenience; sudden news of anxious import was heard without inducing an attack. After nearly two years' trial of the remedy the patient reported that, without being quite cured, belladonna had greatly diminished the tendency to the affection and had in this measure rendered life more enjoyable. It now requires much longer and harder exertion, much hotter dishes, and much longer use of a hot bath to bring on an attack.

Another case of urticaria in a young lady, showing itself as red spots round a minute, tingling white centre, was at once relieved by taking this drug, although other treatment had proved useless.

Finding it useful in healing a case of eczema due to too much contact with water, I have given it with good effect in other cases; for instance, in the case of a boy ten years old,

who was covered with patches of eczema, the affection having lasted twenty-two weeks. External remedies had been avoided, but the irritation was great, preventing sleep. After four days of treatment, during which an ounce of belladonna tincture was used and boric ointment applied, a marked improvement had taken place. To test whether the external application or the belladonna was the healing agent, the latter was discontinued, with the result that the affection became worse, subsiding again on the resumption of internal treatment.

In the eczema of children the drug has seemed to me to be much more useful than arsenic in such cases as I have tried it.

Eczema of the scalp and neck in a woman aged sixty was at once improved and healed under the use of belladonna, and another case of eczema, which had persisted on the lips for a whole year, healed by the same treatment.

Combined with *tr. ferri chloridi*, belladonna is successful in relieving pruritus pudendi, and in general pruritus, both in the young and in adults; a lotion of atropine sulphate, half a grain to the ounce, is for the localized affection of great use, even in cases of long standing. A very bad case of prurigo in a child, though it was not cured, was much relieved by belladonna. Of my five unsuccessful cases, one was a very old case of pruritus vulvæ and two of general pruritus, which, although not relieved by belladonna, were cured by potassium bromide. The other two unsuccessful cases were of erysipelatoid erythema of the face.

The dose should be in all cases moderate; restriction, not inhibition, of the activity of the sweat-glands, the possible constriction of the arterioles (an overdose dilates these), and a moderate anodyne effect on the sensory nerves should be aimed at.

Persons are very variously susceptible to the drug, and while some require as much as 60 minims in twenty-four hours to produce the desired effect, most require not more than 45, or even 30, minims daily. Persons who flush and get headache from the smallest doses will derive no benefit from the drug.

It is necessary, before registering a failure in any case, to ascertain that the preparation used is active. Once I found that a patient who had been progressing favorably ceased to improve, and inquiry showed that the prescription had been made up by a different chemist. The medicine obtained from a third reliable house, however, was promptly efficacious.

The good effects show themselves promptly if the dose is the right one, but nevertheless the remedy must be persistently continued until

cure is effected. I have never seen a case that was not promptly improved yield, however persistent the treatment.

# INTRODUCTION TO A DISCUSSION ON THE MANAGEMENT OF ECZEMA.

READ BEFORE THE SECTION OF DERMATOLOGY AT THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, BRISTOL, 1894.

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Lecturer on Dermatology in the Medical School.

## [ABSTRACT.]

IN opening a discussion on this subject, Mr. Malcolm Morris said opinions still differed as to whether eczema were constitutional or local in origin. His own view was that, although a constitutional dyscrasia, such as gout, glycosuria, kidney-disease, rheumatism, or scrofula, might have a serious modifying influence on the local process, the *causa causans* was, in the majority of cases, the action of micro-organisms. He was also of opinion that seborrhoea often prepared the way for eczema by making the skin vulnerable by microbes. He thought, however, that Unna went too far when he taught that eczema was always and in all cases the result of microbic action. He (the speaker) had often seen the disease arise on perfectly healthy skin, apparently as the result of nervous disturbance. Even in these cases he thought it probable that the parasitic factor played a leading part in the process, the inhibition of trophic influence in certain parts of the skin creating weak points, through which microbic invasion could take place. The management of eczema must in every case be carefully adapted to the special indications present. Mr. Morris assumed that eczematous lesions should in all cases be cured as rapidly and as thoroughly as possible, without fear of the "depraved humors" "settling on" the lungs or other internal organs. Of the numerous cases he has treated, in not one has he seen the slightest ill effect follow the cure of eczematous lesions. He suggested the following points for special discussion:

1. Are internal remedies required in eczema? If they are, what are the precise indications which should guide us in the use of them?
2. The influence of diet in eczema.
3. What are the principles on which the local treatment of eczema should be carried out?
4. How is the tendency to recurrence of eczema in those predisposed to the disease to be overcome? Is there any plan of alternative

treatment by which this result is brought about?

1. With regard to the first of these, Mr. Morris held that, as a general rule, the less internal medication there was in eczema the better. A constitutional dyscrasia underlying the skin-affection must of course be treated on the ordinary principles of medicine. In an ordinary chronic eczema, where there was no reason to suspect any dyscrasia, he trusted entirely to local treatment. Internal remedies should be given in accordance with definite indications. When the lesions were acutely inflammatory he found vinum antimoniale valuable, the indication for the drug being the presence of arterial tension, and depression being a positive contra-indication. If there were a neurotic element in the case, sedatives (opium or, if that disagreed, sulphonal, etc.) and nerve tonics (especially quinine and phosphorus) should be combined with local treatment. Arsenic was unreliable and, if given in inflammatory conditions, did harm instead of good. In like manner iron was contraindicated by acute inflammation. Malnutrition and amæmia should be treated on ordinary principles, and any source of peripheral irritation that could be discovered should, if possible, be removed.

2. With regard to diet, Mr. Morris believed that it had no influence at all except indirectly, by intensifying constitutional conditions, such as gout or glycosuria, or by disordering the digestion and causing vaso-motor disturbance. Apart from these indications, he had seen no reason to believe that restrictions had any good effect in eczema.

3. As regards local treatment, speaking generally, he treated every case as if it were of parasitic origin. He began with a very weak parasiticide and felt his way to the use of stronger applications, taking care not to set up any irritation. The best remedy for local use in dry chronic eczema, especially of seborrhoeic origin, was, in his experience, sulphur, and next to that he placed resorcin. These drugs had the special advantage that they not only destroyed the micro-organisms on the surface, but caused exfoliation of the horny layer, and so brought away the microbes which had penetrated to the deeper parts of the epidermis. When the inflammation was acute, ichthyol was particularly useful. Other antiparasitic remedies useful in eczema were salicylic acid, white precipitate, boracic and carbolic acids. For very persistent chronic eczema of the flexures, chrysarobin was of service.

4. As regards the fourth point, change of climate, with complete rest of mind and body,

was often useful. The particular climate suitable in different cases was largely a matter of idiosyncrasy. Spas were beneficial chiefly in obstinate chronic cases. On the whole, the sulphur springs, especially those of Harrogate and Strathpeffer, were the best for external use. The internal use of sulphur waters was particularly indicated when gout or rheumatism underlay the skin-affection. Chalybeate and arsenical waters were useful in cases in which general tonics were indicated. The alkaline waters of Vichy and Ems did not seem to be of any particular use, even in gouty subjects. In many cases the waters of Bath did good.

*THE TREATMENT OF CHRONIC HEART-DISEASE BY BATHS AND GYMNASISTICS AS CARRIED OUT AT NAUHEIM.*

READ IN THE SECTION OF MEDICINE, BRISTOL, 1894.

By F. J. WETHERED, M.D., M.R.C.P.

[ABSTRACT.]

IN this country Nauheim is practically unknown, but the estimation in which it is held in Germany may be gauged by the fact that during the season no fewer than fifteen hundred baths daily are given. Dr. Wethered spoke of the treatment there applied to cases of chronic heart-disease, from actual observations made on the occasion of a recent visit to that watering-place. Through favor of Dr. Schott, he was able to investigate the effects of treatment in fifty cases, and besides obtaining their histories from their own mouths, had ample opportunities for observing their physical conditions during his stay at Nauheim.

The treatment both by baths and gymnastics, Dr. Schott assured him, could be very well carried out elsewhere, after the acquisition of a knowledge of the system. Nauheim is situated on the Taunus, and is arrived at by train from Frankfort-on-the-Main in about forty minutes. The season commences in May, lasting until the end of September.

*The Baths.*—There are twelve springs at Nauheim, but only four of them are used medicinally. Two are used exclusively for baths, the other two for drinking. Their curative effects were first mentioned by Beneke in 1859, and his observations were extended by the subsequent publication of a monograph in 1872. Others, such as Schott and Groedel, have also written on the same subject.

The chief mineral constituents of the waters are: sodium chloride, 2.8 per cent.; calcium

chloride, two per cent.; and traces of iron, manganese, strontium, etc. There is also much carbonic acid, both free and in the combined state. In one spring there are no less than 889 cubic centimetres in 1000 grammes, and in another as much as 1066 cubic centimetres per 1000 grammes.

*Use of the Baths.*—They are used in the following order:

1. Warm brine baths, without carbonic acid.
- 1a. Warm brine baths, with mother liquor added from the neighboring salt-works.
2. Warm brine baths, with a little carbonic acid.
3. Brine baths, the water being allowed to run in during immersion.
4. Effervescing baths.
5. Effervescing running baths.

Bath No. 1 has a temperature of about 95° F., and is used in cases of great cardiac weakness, the immersion at the commencement lasting about eight minutes. A bath is given on each of three successive days, then suspended for a day, after which more baths are given in a similar manner. After a little while Bath 1a is substituted.

Bath 2 has a temperature of 89° to 92° F. The immersion lasts from ten to twenty minutes. At the commencement some oppression is felt at the epigastrium, but this passes off after a bath or so. On the healthy heart a reduction of pulse-rate is noted, its volume being markedly increased. In the case of a diseased heart the rate is also decreased, and irregularity, if present, disappears, the pulse improving in volume. The respiration is rendered slower and deeper, and there is great relief to the subjective symptoms. The improvement here mentioned lasts at first from one to three hours, the time increasing as the patient has been longer under treatment. As an instance of the effect, Dr. Wethered then gave brief notes of a case observed by himself.

The effervescing bath has a temperature between 88.3° and 91.4° F. Its effect on the pulse is more marked, but of the same character. The sense of oppression experienced during immersion is also greater, but no fatigue is felt afterwards.

In the case of the "stream baths" the pulse-rate is slightly raised, but at the same time the strength and volume of the wave is very markedly increased; this effect lasts for about three hours. Dr. Schott considers that the action of the baths is to be explained by supposing that a reflex action, starting in the superficial sensory nerves and passing through the vagus to the heart, is set up. This view has some sup-



port in the fact that on emerging from the bath the skin is quite red and hot.

*The Gymnastics.*—Although the systems devised by Oertel and by Zander are both well known here, they are but seldom employed. The actual methods made use of at Nauheim should be called "movements with resistance" rather than true gymnastics. These consist of extension, flexion, and rotation of the legs, arms, and trunk, against the carefully-applied resistance of a skilled attendant. Care is taken that no one exercise is repeated twice in succession, and the resistance is very carefully graduated according to indications afforded by the patient himself. Any sign of breathlessness is a signal for its immediate reduction.

Another form of gymnastics is the "self-resisting" movements, in which the action of one set of muscles is resisted by that of the opposite set of muscles in the same limb. Such exercises are either used independently or in combination with the bath treatment.

*Effect.*—The pulse becomes more regular, its volume increasing and its rate diminishing. Any increase in the pulse-rate during treatment indicates too rapid movements, which are then immediately slowed down. Another curious phenomenon is also seen as the result of the exercises,—the area of cardiac dullness becomes greatly diminished. After a course of such treatment, moderate hill-climbing may be recommended.

Dr. Schott also considers that the effect of the "gymnastics" is of a reflex nature.

As for the class of cases suitable for the Nauheim treatment, it may be said that all cases, save those of aneurism, or those with indications of advanced arterio-capillary fibrosis with high arterial tension, may expect to be benefited.

The patients whom Dr. Wethered found there stated that they never derived such great benefit from any other treatment or *régime*, and many of them returned on each successive season. In the severest cases the breathing was soon rendered easier, while ascites and cedema were often so far improved as to admit of carriage exercise or even moderate walking exercise. As to the cases which show the most marked improvement, these are instances of dilated heart, the result of structural alteration, and indications of a failing left ventricle. When there is much severe pain of a pseudo-anginal nature, this rapidly disappears in most instances, under the exercises alone. Cases of valvular disease also do well, if not too far advanced.

Since returning to London, Dr. Wethered has instituted a kind of artificial Bad-Nauheim

at the Middlesex Hospital, and several patients who have undergone treatment under these conditions have already shown great improvement.

### AN ADDRESS ON PYREXIA AND ITS TREATMENT.

DELIVERED IN THE SECTION OF MEDICINE AT THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, BRISTOL, 1894.

BY W. HALE WHITE, M.D., F.R.C.P.,  
Physician to Guy's Hospital.

[ABSTRACT.]

AN animal is said to be suffering from pyrexia when its temperature exceeds the limit of health. In man this limit is between 98° and 99° F., but its extent varies in different animals. In cold-blooded animals it is very great, and the evolution of warm-blooded from cold-blooded animals is to be attributed to the fact that the former are primarily aquatic, while the latter are primarily terrestrial.

Heat is produced for the most part in the muscles, and is under the control of the central nervous system. Experiments show that damage to the corpus striatum produces a great rise of temperature. Heat is lost by the skin and lungs, and the loss, too, is under the control of the central nervous system. Some have supposed that there is a regulatory mechanism which is constantly so adjusting the loss and production as to keep the temperature constant, and that the pyrexia which follows on damage to the cortex is due to interference with a thermotaxic mechanism situated there. Others regard this form of pyrexia as due to the fact that the cortex has thermogenetic functions as well as the corpus striatum. The high specific heat of animal tissues is of great help in maintaining the temperature constant. All these parts of the central nervous system may be influenced reflexly from the periphery and directly by the composition of the blood circulating through them, so that we have a central nervous temperature due to lesions of the cortex, the corpus striatum, the crura, pons, and cord, and a reflex pyrexia and a circulatory pyrexia.

We will now consider each of these clinically.

#### CENTRAL NERVOUS SYSTEM.

*Cortex.*—The author has collected fifty cases in which damage to the cortex in man had caused a rise of temperature, sometimes as high as 109° F., and when the cortex was damaged on one side only the temperature would be found to be highest in the opposite axilla. In men-

ingitis also perhaps the great height of the temperature was in part due to the irritation of the cortex. Many functional disorders in which the functions of the cortex were perverted showed pyrexia. Such were epilepsy, delirium tremens, and chorea, but the most important was hysteria. The chief characteristics of hysterical temperatures were the age, sex, and hysterical character of the subject, the fact that it is very erratic, that it may vary in different parts of the body at the same time, that pulse and respiration ratio to the temperature is often irregular, that other signs of fever are often absent, and that the action of antipyretics is often uncertain. Allied to these hysterical temperatures we have the so-called inexplicable pyrexia, which may continue for months, usually with a swinging temperature every day. The explanation of these is very doubtful.

*Corpus Striatum.*—Many instances of pyrexia due to damage of this were quoted, and it was pointed out that a rise of temperature could usually be detected in hemorrhage into the corpus striatum. In the first few hours there might be a fall due to shock, but soon it begins to rise, and attains its maximum—often as great as 105° F.—in four hours. Then for four days it gradually falls, and reaches normal on the fourth day. For the next four days it usually is subnormal, after which it is normal. Up to this time it is always higher in the axilla opposite to the lesion than in that of the same side.

*Crus, Pons, and Cord.*—Cases of temperature due to damage of these parts were given, and it was therefore concluded that damage of similar parts of the central nervous system, both clinically and experimentally, caused pyrexia. The importance of damage to the central nervous system as a cause of pyrexia was not recognized enough. Dr. Bryant had found that out of one hundred cases of hyperpyrexia, eleven were due to injury to the brain, three to cerebral hemorrhage, six to injury of the cord, and one to myelitis.

*Reflex Pyrexia.*—As an instance of this the following examples were quoted. Surgeons had shown that seventy-five per cent. of the cases of simple fracture had a slight rise of temperature after the accident. Pyrexia was well known to be associated with renal and biliary colic, and Dr. Bryant had recorded six cases of burns, in all of which there was hyperpyrexia, without any evidence, even post-mortem, of septicæmia. Possibly in many abscesses part of the pyrexia was due to the peripheral irritation of the abscess, for, other things being equal, the greater the tension of the abscess the higher the temperature.

*Circulatory Pyrexia.*—Many vegetable poisons would produce pyrexia, such as atropine, cocaine, and caffeine; also animal poisons, as bad meat, mussels, bad cheese, etc., tuberculin, pepsin, and albumoses, would cause pyrexia. The chemical products of excessive muscular exercise would sometimes produce pyrexia, as seen in fatigue fever. In the case of diphtheria and anthrax, two distinct toxins manufactured by the respective bacilli had been isolated, are pyrogenic, and another which produced the other symptoms, and no doubt in the case of all the specific fevers the pyrexia was due to the circulation in the blood of pyrogenic toxins.

#### TREATMENT.

*Hyperpyrexia.*—Although it may be open to discussion whether it is the hyperpyrexia which is harmful, or whether it is that the excessive temperature is merely indicative of some deeper-seated harmful process, the fact remains that the physician knows that if hyperpyrexia is present, the patient is in the very greatest danger. The only treatment possible is the prompt and thorough application of the cold bath. The water should be at a temperature of 75° F. The patient should be kept in till his rectal temperature has fallen to 101° F., which usually occurs in about ten minutes. The bath should be repeated whenever the temperature is obviously rising rapidly. The importance of this treatment is shown by the fact that among fifty-six cases of rheumatic hyperpyrexia, of seven not treated, all died; of three treated by antipyretic drugs, all died; but thirty-three of those treated by cold bath recovered.

*Pyrexia.*—We must remember that it has never been shown that ordinary pyrexia is usually harmful, and also that we are only treating a symptom, just the same as when antimony and aconite were given to reduce the pulse in fever we were only treating a symptom. Now, we believe such treatment to have been unwise, and when we bear in mind how little we know about the cause of fever, there is no *a priori* evidence that the treatment of pyrexia as such may not also be unwise. Such authorities as Cantani, indeed, look upon pyrexia as beneficial. He thinks that it aids phagocytosis and exerts a kind of sterilizing action in the body. Last year, too, at Newcastle, Professor Roy pointed out that pyrexia was one of the defensive mechanisms which we possess against the organisms of the specific fevers, and Sana-relli holds the same opinion. But even if pyrexia does no good, that is no reason why we

should treat it, for it may do neither good nor harm. The remedy may be worse than the disease. Then, too, the treatment of single symptoms is bad for the doctor. It gets him into bad habits, and therefore in the long run it is bad for the patient. Also the treatment of pyrexia gives a false sense of security, for we have seen that some of the specific micro-organisms manufacture two toxins,—one pyrogenous and the other inducing other symptoms. By treating the pyrexia we leave the other toxin free to do harm, although, because the temperature is lowered, we fancy that the patient is better. Then, too, the reduction of the temperature abolishes a very valuable help to diagnosis. Especially do we miss this in the cases of deep-seated abdominal suppuration or those of doubtful specific fevers. The reduction of pyrexia may, too, impair immunity, for we know that the conferring of immunity often entails pyrexia; and, lastly, it must be remembered that antipyrin, antifebrin, and phenacetin are in large doses severe poisons. As, therefore, it is doubtful whether the treatment of pyrexia as such is a good thing, we must examine those diseases in which the use of antipyretics undoubtedly does good. Such are ague, rheumatic fever, and typhoid. Now, in ague quinine does not act as an antipyretic, but as a direct poison to the plasmodium malariae, and it is highly probable that in rheumatic fever salicylates also act as direct specific remedies. With regard to typhoid fever, there is no doubt that if large numbers of cases are taken, those treated by the external application of cold do better than those not so treated; but, on the other hand, this treatment is not required for all cases. It is not often required if the temperature is below 103° F. No fixed point should, however, be taken; each case must be judged on its own merits, and no physician should slavishly follow one method. What is a good treatment for one case is unsuitable treatment for another. A great point, however, to bear in mind is, that it has never been shown that this treatment acts for good solely because it reduces temperature. It does more than this; it calms delirium, quiets the tremor, lessens the prostration, and diminishes the liability to complications, and also it has been stated that during the treatment of typhoid by cold baths the elimination of toxins is enormously increased; therefore it is probable that the cold bath should not be looked upon as an antipyretic any more than as an antideliriant, but that it should be regarded as acting directly or indirectly upon the specific cause of typhoid fever. Dr. Hale White summed up by saying

that hyperpyrexia must undoubtedly be treated by cold baths. The routine treatment of pyrexia is bad, and when the treatment appears to do good it is because the means employed attacks the cause of the disease, and the means is not acting as an antipyretic, or, at any rate, only in the sense in which mercury is the antipyretic of syphilitic fever. Antipyrin, antifebrin, and phenacetin should rarely be employed as antipyretics.

#### ON THE TREATMENT OF NEURASTHENIA.

READ BEFORE THE SECTION OF PSYCHOLOGY AT THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, BRISTOL, 1894.

BY G. H. SAVAGE, M.D., F.R.C.P.,  
Lecturer on Mental Diseases at Guy's Hospital.

#### [ABSTRACT.]

THE author stated his views as to the nature of neurasthenia, which had been defined as a nervous disorder in which there were weakness and irritability of the nervous system. The greater number of the patients suffering in this respect did not, however, become insane. Nervous weakness might be accepted as another name for the disorder, but he was unwilling to consider "brain fatigue" as a synonymous term. Omitting the theoretical and etiological portions of the discourse, the following were the hints offered by the author as to the proper treatment of the affection:

The first consideration is, that assertion rather than argument with a patient is always to be counselled. Let the physician lay down the regulations and then decline to discuss them. In laying down a plan of treatment, one of two courses is to be adopted,—either isolate the patient, so as to give complete rest, while means are applied for the re-establishment of the nervous system, or place him under firm, skilled companionship, and make him help to work out his own cure by indulgence in muscular exercise, etc. Of course every case must be made a matter for separate study, but in the author's opinion rest is the most important element of success, dieting coming second.

With regard to diet, in some cases it will be found desirable to reduce the daily allowance of meat and to treat the patient as if he were gouty. In others, however, a full, rich diet is indicated. In the case of teetotalers perhaps the best thing is to give a wineglassful of coca wine with a biscuit a short time before the time for sleep. In other cases a few grains of chloral, sal volatile, or paraldehyde may be necessary in order to secure sleep. The last

is, however, objected to on account of its disagreeable taste. In yet other cases a hot bath shortly before bedtime may prove efficacious. In all cases it is well to avoid the use of morphine, or, if this drug be used at all, it should be given without the knowledge of the patient, owing to the great risk of his acquiring the morphine habit.

Hypochondriasis is very liable to show itself in the neurasthenic, but the type is not of the usual and most objectionable kind, for these people have in general an unbounded faith in their doctor.

In concluding his paper, Dr. Savage presented an epitome of the rules for treatment advocated by Dr. Coles, the American neurologist, who considers that what we should aim at is as follows: Objective and subjective symptoms are to be treated, and the elimination of waste products is to be encouraged through the skin, kidneys, and bowels. This should be done by dieting rather than by purges. Hot-water draughts, mineral waters, hot enemata, abdominal massage, regular habits, and the use of fruit in abundance may all be advisable. Digestive pills of some sort may also be of service. Skimmed milk is one of the most innocent and efficacious means of stimulating the secretion of the kidneys. Many of the sufferers showing evidence of a gouty diathesis, salicylate of sodium should be borne in mind as an efficient means of encouraging the removal of uric acid. The action of the skin may be promoted by moderate exercise short of fatigue, hot bathing at night, or, in some cases, by an occasional Turkish bath. Although sea-bathing is of service in isolated instances, it is not to be advised, save with great circumspection, as in many instances it is apt to cause more harm than good.

With regard to the question of dieting, it should be one's aim to give a good solid diet, but this must be done gradually. Thus, to begin with, a full milk diet is to be ordered, and this is to be gradually supplemented with fish and, after a time, with the more digestible meats. Food should be cooked in the plainest manner possible. Ordinarily it is well to avoid the use of much meat essences, but cream, malt, and prepared foods may be given. Kumiss is one of his favorite food beverages, and digestion may be materially aided in some cases by the administration of small doses of sal volatile a short time after meals. It is, again, of great importance that food should be administered at regular intervals,—generally every four hours. Should the sufferer wake early in the morning, fluid food in some form should be at hand, and

a glass of milk under these circumstances sometimes secures an addition to the hours of sleep. Exercise should not be too prolonged, and should be taken in cheerful companionship. Dr. Savage is a strong believer in the efficacy of golf under these conditions. In the slighter cases a sea-voyage in good company may often effect a complete cure.

As sleeplessness is a typical symptom in most cases of neurasthenia, it is well to know how best to combat it. Hypnotics are to be, as a rule, avoided, but the use of suitable food, stimulants, coca wine, and hot baths are, as already mentioned, of service.

After a hot bath, however, it is important to avoid all mental work, as its beneficial effects are easily overbalanced.

As for the use of electricity in one form or another, the author was not inclined to speak with enthusiasm, and he also regarded hypnotism with disfavor. Subcutaneous injections of serum had been said to yield good results at the hands of some French observers, but of this method of treatment he could not speak from personal experience.

#### *THE EFFECT OF CREOSOTE ON THE VIRULENCE OF THE TUBERCLE-BACILLUS.*

A PAPER READ BEFORE THE SECTION OF MEDICINE AT THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, BRISTOL, 1894.

By W. KINGTON FYFFE, M.B., M.R.C.P.,  
Medical Registrar, St. George's Hospital; Late Pathologist and  
Medical Registrar, Victoria Park Hospital for  
Diseases of the Chest.

#### [ABSTRACT.]

IN this paper an investigation was described upon the effect of creosote when administered (1) simply by inhalation, (2) by the mouth, (3) by means of a chamber filled with the fumes of creosote, in which patients were kept for an hour daily. The method adopted was to inoculate sputum into the legs of guinea-pigs before the patients were put under any treatment, and again at the end of a two months' course of creosote, and the results were compared by the length of time the pig lived in each case and by the condition of the tuberculous mischief in the pig when killed on the fifteenth day. In twelve cases in which patients simply inhaled the drug, though they were taking cod-liver oil and such like drugs in addition, creosote had no effect whatsoever. The lesions in the guinea-pig produced by the sputum before treatment were exactly equiva-

lent to those produced after two months' treatment by inhalations of creosote.

When given by the mouth, even in small doses (2 minims three times a day), there was a distinct effect on the animal injected; the primary inoculation before treatment killed the animal in twenty-one days. The second inoculation, after treatment had gone on for two months, killed the pig at the end of seven weeks. In the case of larger doses (6 minims *ter die*), the primary inoculation killed in twenty days, the second not for nine weeks.

The longest time that any pig lived was three months after inoculation with sputum from a patient who had been taking 10 minims of creosote for two months. Eleven cases in all showed that the larger the doses the longer the animals injected lived. It must be admitted, however, that no matter how large the dose (up to 12 minims three times daily), the pigs eventually died of tuberculosis; so that, though the power of the bacilli was rendered less, the organism was only weakened, not killed. With regard to those cases treated by the creosote chamber, only two were investigated. In both these inoculations at the end of two weeks' treatment did not kill guinea-pigs for fourteen to fifteen weeks. Though the number of cases is too small to draw any definite conclusion from, it is evident that the virulence of the bacillus was markedly affected, and that the animals lived longer than in any of the cases experimented upon. Further experiments were made on tuberculous guinea-pigs. Guinea-pigs were inoculated with tubercular sputum in one leg; into the other creosote was injected, with the result that though the pigs died from cellulitis set up by the creosote, generally about the sixteenth day, tubercle-bacilli were only found at the seat of inoculation, not elsewhere. A control animal killed on the sixteenth day had extensive tuberculosis of its viscera. If, however, the injections of creosote were not begun till fifteen days after the sputum had been injected, they had no effect whatsoever. Injections begun at the end of the first week kept the animal alive for a month.

The conclusions drawn from the experiments were as follows:

1. That creosote given simply by inhalation had no effect on the virulence of the bacilli.
2. That when creosote was given by the mouth, even in small doses, there was a definite effect, and when the dose was pushed there was an extremely marked diminution in virulence.
3. In the first series it was shown that the

animals lived longer than in any of the other cases, but that it is impossible to dogmatize from so small a number.

4. Creosote injected under the skin in tuberculous guinea-pigs, provided that the disease was not too far advanced, had a markedly restraining effect on the ravages of the bacilli.

#### THE USE OF ELASTIC LIGATURES IN LAPAROTOMIES.

Following Professor Olshausen's suggestion, PROFESSOR DOHRU (*Centralblatt für Gynäkologie*, July, 1894) has employed the elastic ligature in about three hundred cases. He uses it in ovariectomies and myotomies, with either intra- or extraperitoneal pedicles.

The ligature is a solid, smooth, four-millimetres-thick strand, which is passed through a lead ring, and the ends being drawn tightly, are held in place by clamping the ring by means of forceps.

This ligature is recommended upon the following grounds:

1. The certainty of blood control. Owing to the strength of the rubber and the ease in securing it, one can apply it tighter than a silk ligature.
2. The ease with which it is rendered aseptic.

Despite the size and the presence of a non-absorbent foreign body in the abdominal cavity, no bad results have followed its use, the ligature being readily encapsulated.

#### ANTRUM ABSCESS.

HERZFELD, in *Langenbeck's Archiv* (*Centralblatt für Chirurgie*, July, 1894) cites four cases of abscess of the antrum of Highmore. Among other symptoms he mentions of diagnostic importance a circumscribed swelling on the septum near the point where this structure approaches the antrum, the mucous membrane of the septum being at this point raised from the bone. While the sounding of the normal opening into the maxillary sinus is often impossible, yet it is possible to break through the anterior wall with a sound or some sharp instrument at a point two-thirds to one centimetre above the lower edge of the middle turbinated bone. After opening, the sinus is washed out with antiseptic solutions, curetting of carious bones and granulations.

# The Therapeutic Gazette

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## Leading Articles.

### WHAT IS THE SAFE DOSE OF ANTIPYRIN?

WHENEVER a new drug is introduced to the attention of the profession, it goes through a period of experimentation in which even its proper dosage is a matter of doubt. Many of us will remember that when antipyrin was first introduced as an antipyretic, before we recognized its value as an analgesic, the doses generally administered averaged fully 15 or 20 grains. Since that time our increased experience of its action has shown us that much smaller doses are equally efficacious and in the opinion of the majority of the profession more safe. We have already in other editorial articles in the GAZETTE combated to a certain extent statements made by some practitioners that antipyrin is a powerful cardiac depressant, but we have admitted, on the other hand, that there is no doubt that in some cases its employment in very large doses is followed by circulatory depression, particularly in the pres-

ence of severe disease. Our attention has been particularly called to this subject by a case in which very large doses of the drug were administered in the treatment of epilepsy, and also by an article, which will be found in the Progress columns, by Bondurant, which appeared in the *American Journal of Insanity* for July, 1894. In the case of which we speak the heart-sounds were so exceedingly feeble that it was almost impossible to distinguish them, even after exercise. There was marked tendency to vaso-motor relaxation and localized congestion, and there was also some cardiac palpitation. The pulse when the patient was quiet was feeble and irregular. Careful inquiry as to the medication which he had been taking elicited the fact that he had been in the habit of swallowing 50 grains of antipyrin three times a day for eight and a half months. He stated that his tissues bruised easily, small blows making large ecchymoses. He also stated that a well-known member of the profession had recommended these doses, and had declared that they were perfectly safe. In the article of Bondurant, which we have quoted, the average large dose which was administered for many weeks without danger, it is asserted, was from 45 to 75 grains a day, which is about half the amount we have named. Elsewhere we have called attention to the important fact that, after all, the dose of the drug is governed more by the susceptibility of the patient than by the actual number of grains which are administered, and it is also controlled, to a certain extent at least, by the effect which we desire to produce in the disease we are treating. The statistics which have so far been collected regarding the untoward effects of antipyrin indicate that in the majority of instances these untoward effects arose from doses of 10 or 15 grains almost as frequently as with massive quantities, showing, in other words, that susceptibility was a more powerful factor in the production of such symptoms than the actual number of grains. In view of this susceptibility and in view of the uncertainty which to a certain extent exists even at the present day as to the best moderate dose of antipyrin, we may conclude that 5 grains three times a day is quite sufficient as a beginning dose in the vast majority of cases, that in a fair proportion of instances even smaller quantities will be equally beneficial, and that it is exceedingly doubtful whether doses of more than 45 grains a day can be taken without danger to the patient's organism. This is particularly so in view of the fact that the production of chronic poisoning by such doses in the lower animals has been

shown to be followed by slow degenerative changes in the kidneys, liver, and spleen.

#### CONFIRMATORY WORK UPON THE ACTION OF CHLOROFORM.

THE readers of the THERAPEUTIC GAZETTE may recall the results of the study of the action of chloroform carried out under the request of the government of Hyderabad, India, which were published by Hare and Thornton in the October number of the GAZETTE, 1893. The most important contribution to the subject since that time is the article in the *Medical News* of August 25, 1894, by Drs. Randall and Cerna, of Galveston, Texas, who have not only reviewed the literature to a considerable extent, but have gone over the work performed in various investigations with considerable thoroughness. It is interesting and pleasant to note that the conclusions which they arrive at as a direct result of their experiments are practically identical with those which we published in October, 1893, by Hare and Thornton, and this is the more striking because they themselves state that they began their experiments quite convinced that death from chloroform occurred through primary cardiac paralysis, but that their experiments have told quite a different story, so that, to use their own words, "in not a single experiment did we see distinct cardiac failure preceding the stoppage of the respiratory function, and in only one case surely and in a second one probably there was noticed a simultaneous arrest of both respiration and the action of the heart." Their experiments were performed in the presence of a number of the faculty of the Medical Department of the University of Texas, all of whom believed that death from chloroform was due to cardiac failure, but were forced to admit that, in the experiments which they witnessed, a respiratory death took place.

The latter part of the paper of Randall and Cerna consists to a certain extent of a friendly criticism of the final conclusions of Hare and Thornton. It will be remembered that in the work of Hare and Thornton they recognized very distinctly that profound arterial depression associated with cardiac failure, even though death might be *physiologically* due to failure of respiration, was a dangerous and never-to-be-forgotten possibility, and they recommended that the respiration should be watched more than the circulation only, because they believed that the respiration would give the first indication of the dangerous action of chloroform. Randall and Cerna, while agree-

ing in this statement, insist more strenuously than did Hare and Thornton upon the anæsthetizer watching both functions, and we have no doubt that this advice is wise, unless practical experience shows that it is impossible for the anæsthetizer to watch the pulse and respiration and to handle the chloroform satisfactorily at the same time without diminishing his attention to any one of these important duties. It is a fact worthy of note that so competent investigators carrying on independent experiments in the far Southwest should have so entirely confirmed another series of experiments performed on the Atlantic coast under entirely different climatic conditions.

#### THE VALUE OF ARTIFICIAL RESPIRATION IN CEREBRAL COMPRESSION.

IN a communication published in the *Quarterly Medical Journal*, Horsley calls attention to the fact that in cases of cerebral compression, such as arise, for instance, from cerebral hemorrhage, tumor, or depressed fracture, as well as from sudden and violent concussion, especially when applied in the occipital region, death is due to failure of respiration. From experiments on animals he determined that a rise of pressure in the skull always causes slowing and diminution of the respiratory movements and later arrest of the same, and furthermore, after release and re-establishment of the pressure has been carried out once or twice, the respiration becomes periodic, exhibiting the characteristics of Cheyne-Stokes breathing, or simply becomes irregular in force and rhythm. These effects may be due both to direct pressure and secondary anæmia caused thereby.

The three common causes of increased intracranial tension—namely, tumor, hemorrhage, and inflammatory foci—exhibit in their clinical histories sudden death from arrest of respiration, this arrest being invariably fatal, unless the skull is immediately opened and pressure relieved. The truth of this statement Horsley shows by the recital of a number of cases. The most important practical application of Horsley's communication is the accentuation of the value of artificial respiration in cases of compression or of severe concussion. As the author states, when a man drops apparently dead from a blow in the occipital region, death is commonly attributed to heart-failure, and no effort is made to practise artificial respiration, though this is indicated quite as clearly as when death is threatened from drowning. The same holds true in regard to apparent sudden death from

bullet wounds of the cerebral hemispheres, it having been experimentally determined that, provided no interventricular hemorrhage is pressing directly on the respiratory centre, recovery by artificial respiration is possible.

Horsley sums up his communication with the statements that the respiratory centre is more sensitive to mechanical pressure and shocks than any of the lower vital nerve-centres, that where death threatens from intracranial pressure artificial respiration should be performed and the skull opened freely, and in cases of sudden shock artificial respiration should be instituted immediately, and heat should be applied to the head, preferably by irrigation.

The teachings conveyed in this communication are novel and in some respects directly opposed to the common practices advocated in this class of injuries. Thus, the application of hot irrigations to the skull in cases of severe head injury, for the purpose of relieving shock and stimulating the respiratory centre, is directly opposed to the popular practice in such cases. The value of the ice-cap, for instance, is firmly engrafted upon the mind of all hospital surgeons. Immediate trephining in all cases of compression greatly enlarges the field of usefulness of the emergency surgeon; and since it has been shown that life can be maintained by artificial respiration in these cases, he will not have before him the fear of death on the table, an accident which is by no means rare in brain surgery. To those who render first helps to the injured there is now given one more indication for the performance of artificial respiration.

#### *TETANUS ANTITOXINE.*

IN previous numbers of the THERAPEUTIC GAZETTE, both in the Editorial pages and the Progress columns, the interesting experiments of Tizzoni and Cattani in the preparation and practical application of the tetanus antitoxine have been fully detailed. It was stated that this method of treatment must still be considered in its experimental stage, since it has not yet been tried on a sufficient number of human beings to warrant any conclusion as to its efficiency. Each carefully reported case of its use is, however, of great importance, and Giusti and Bonaiuti have just added a new case, which to them is so convincing that they strongly advise the equipment of every railroad medical chest with a sufficient quantity of antitoxine, which should

be immediately injected into all patients whose wounds have been contaminated with earth or dust, thus, as they claim, positively preventing subsequent development of lockjaw. The case in point has been reported with an attention to detail worthy of the most modern scientists.

The patient sustained a lacerated wound of the scalp and face, which was contaminated by earth. The right leg was also broken. The wound was immediately disinfected as thoroughly as possible with carbolic and bichloride solution and dressed with iodoform and carbolized gauze; this process of cleaning was again repeated in a few hours. Twenty-one days later twitchings were noticed about the seat of fracture. In twenty-four hours the symptoms had advanced so that there were tonic contractures of the arms, slight trismus, fixation of the head on extension, pain in the chest, nausea, and vomiting, increased by taking nourishment; shortly true tetanic convulsions developed. The ordinary treatment was continued for three days, the symptoms steadily growing worse. The pulse was running about 140 between paroxysms, and respirations were irregular; therefore, 40 cubic centimetres of serum from an immunized horse, representing a strength of 1 to 10,000,000, were injected; five hours later 20 cubic centimetres were injected. Following this second dose there was distinct amelioration of symptoms in one or two hours. The next day, the condition of the patient not being materially improved, 20 cubic centimetres of dog serum, representing a strength of 1 to 5,000,000, were injected. Seven hours later 10 more cubic centimetres were employed. The following day all his symptoms were very much better; nevertheless, 10 more cubic centimetres of blood-serum and 50 grammes of dried precipitate of horse serum were injected. Following this treatment by some hours violent convulsions were noted. These subsided, and thereafter the convalescence was practically uninterrupted. During convalescence several injections of antitoxine were made.

In considering this case it should be noted that the period of incubation was long,—i.e., twenty-one days,—and even when the disease developed it could scarcely be called fulminant in type; hence it belongs to the class of cases in which under any treatment the prognosis is relatively good. It would appear, then, that the benefit of the antitoxines in this individual case is by no means proved, and that convalescence might have taken place had they been withheld.

It will require many such cases to prove the value of the antitoxine. On the contrary, one



or two instances of tetanus becoming manifest within a few hours or one or two days of the time of wound infliction, and reaching its full development within the day, yet disappearing after injections of antitoxine, will be enough to conclusively prove its value, since under all known treatments the mortality in such cases is almost absolute. Until further proof is adduced, then, the proposition of Giusti and Bonaiuti to make prophylactic injections of immunized serum in every case of earth-infected wound will probably not meet with any very great favor.

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## Reports on Therapeutic Progress.

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### ON THE DISINFECTION OF SCARLET FEVER PATIENTS BEFORE THE COMPLETION OF DESQUA- MATION.

GIBSON writes on this subject in the *Practitioner* for July, 1894. He believes it to be the received opinion in regard to scarlet fever that until desquamation ceases contagion is still present. From the long period this process occupies in many cases, and the inconvenience and irksome toil and trouble therefrom arising to families in private practice, the author was led to investigate the correctness of the common opinion, and to ascertain whether or not sufferers from this disease might not by some method of cleansing or disinfecting be freed from the contagion before the process of desquamation was completed. In every case he has found the means used successful.

The method adopted is simple enough. It is to give a succession of three or four (generally not more than three) comfortably warm baths, sometimes daily, at other times on alternate days, using freely carbolic acid soap, and washing the patient most thoroughly from top to toe. After each bath, except the last, the patient was put back to the bed on which he had lain with the disease; after the last he was taken from the bath into a clean room, there dressed with clothes free from infection, and then allowed to mix with the rest of the family. Any patient with a complication, such as otitis or ulcerated or suppurating throat, was not subjected to the process.

The first case in which he tried the experiment was that of his own son, who had caught the disease at school, about eighteen years ago. The case was of the ordinary kind, but for ten days the fever ran high and the eruption was copious. He was isolated with every practica-

ble precaution in his father's house. All the other members of the household remained at home. About the end of the third week he was fairly well, and was then subjected to the process of cleansing or disinfecting described, and after the third bath was allowed to mix with the other members of the household, consisting of eleven individuals, six of whom were children, and none of whom had ever had the disease. The result was that not one took it. In his case desquamation went on for three weeks after he was allowed to associate with the others. Since then the writer has frequently made similar experiments, and with like results.

The circumstances in different cases varied, in so far that in some the other children of the family in which the disease had broken out were removed, and were brought back as soon as the infected member and the house were cleansed and disinfected. In other cases where the house was large enough, and where isolation could be fairly well maintained, the other children remained. In some other instances, again, the infected member was removed and brought back to mix with the others as soon as he was cleansed or disinfected.

In none of the cases experimented on was desquamation over when the disinfecting process was applied, and the writer had an opportunity of observing its continuance in a number of cases after disinfection had been effected. In several cases desquamation went on for weeks afterwards. Whatever, therefore, be the connection between desquamation and the infectious micro-organism, the union is not so intimate but that the latter may be destroyed or rendered innocuous by a simple process of cleansing after the second or third week of the disease. Desquamation may then be allowed to continue its course to its natural termination without risk of spreading the disease.

In no case did any complication follow the cleansing process; indeed, in all the cases convalescence seemed to me to be rather hastened than retarded. In all the cases every effort was made to keep the patients in bed until disinfection was accomplished. In most cases anointing the body twice daily with olive oil mixed with some disinfectant was employed. The length of the period from the commencement of the disease until the disinfecting process was begun varied slightly, according to the health of the patient. In some cases it was begun immediately after the second week; in others it came at the end of the third week.

The use of the bath as a means of treatment in scarlet fever has been recommended and practised often enough; but it has not been

stated, at least to the writer's knowledge, that the application of bathing with a disinfectant might destroy the contagious principle or render it innocuous at such an early period of the disease as between the second and third week, and before desquamation was completed, or that after the application of it in the manner described patients might be at liberty, even though the process of desquamation was still progressing, to mix with the healthy without risk of spreading the disease.

Should this simple process of cleansing or disinfecting scarlet fever patients so early in the course of the disease, or as soon as convalescence is established, prove generally successful, the advantage to private families would be very great. The maintenance of isolation and other prophylactic means in private houses for four to six weeks, when the patient to all appearance is fairly well, is often effected only at great inconvenience, and is a trying hardship to patient and relatives. If the period could with safety be reduced to two or three weeks without risk of communicating the disease, even though desquamation was going on, the relief to all concerned would be correspondingly great.

#### CHLORALOSE.

FLEMMING, in the *Practitioner* for July, 1894, thinks that we may expect benefit from chloralose in all forms of functional sleeplessness, in the insomnia of psychical excitement, of hysteria, of neurasthenia and overwork, of functional cardiac irritability, and in attacks of epilepsy and somnambulism.

Secondarily, its use may enable us to separate objective from subjective pain, and so help, for instance, in the differential diagnosis of some forms of hysteria.

Chloralose will avail nothing in the insomnia of alcoholic excitement, multiple neuritis, or cerebral hemorrhage, or the sleeplessness due to any painful organic lesion or peripheral irritation.

In the insomnia of lunatics, where there is depression, it is said to be useful if given in large doses.

In the early stages of Bright's disease, chloral hydrate, owing to its effect on the blood-pressure, is probably more efficient.

The author has tried to mark plainly the limits to the use of this hypnotic, to save it, if possible, from the worst curse of a new drug,—that of becoming a fashionable favorite, and, like other fashionable favorites, having to heal all things and all men, with a success that is more

commercially profitable than therapeutically useful.

We probably have in chloralose a practically pure hypnotic,—that is, a drug of which the dose that is sufficient to produce sleep affects the psychical element directly and solely.

#### THE DECOMPOSITION PRODUCTS IN CHLOROFORM.

LOVE, in the *Australian Medical Gazette* for June 15, 1894, after a useful article with the above title, states that we should always keep the chloroform in a cool cupboard and protected from the action of light. Keep the bottle well corked and as full as possible, and never use chloroform obtained from a druggist's, where it is often left exposed to light or heat in ignorance as to the consequences.

#### TROCHES.

CATHELL recommends the following troches in the *Maryland Medical Journal* of August 18, 1894. Of course a thousand and one combinations could be made, but for every-day cases the author has devised the following varieties, and finds them to admirably cover the ground in ordinary practice:

##### MUCO-STIMULANT.

Apomorphine, gr.  $\frac{1}{8}$ ;  
Solid ext. eucalyptus, gr.  $\frac{1}{8}$ .

##### MUCO-SEDATIVE.

Ext. pulsatilla, gr.  $\frac{1}{12}$ ;  
Ergotin, gr.  $\frac{1}{16}$ ;  
Codeina sulph., gr.  $\frac{1}{16}$ ;  
Ext. bellad., gr.  $\frac{1}{16}$ .

##### MUCO-TONIC.

Kalii chlor., gr. i;  
Cubeb,  
Resin,  
Pulv. ipecac,  
Catechu,  
Balsam Tolu, of each, gr.  $\frac{3}{4}$ ;  
Capsici, gr.  $\frac{1}{16}$ .

*Muco-Stimulant.*—The action of these is astringent, stimulant, and antiseptic, and most marked upon the mucous surface, preventing the formation of a thick, tenacious mucus. The writer has, moreover, found them of special advantage in obstinate coughs by promoting marked expectoration and mollifying many bronchial and laryngeal troubles. Again, while they possess valuable stimulating properties, they are free from the extremely bitter taste that characterizes many of the other

troches; in this respect they strongly contrast with catechu, kino, etc., which greatly favors their administration to children and fastidious patients.

*Muco-Sedative.*—This troche sheathes and produces a soothing, calmative effect, lessening the tendency to cough and relieving throat soreness. They have been of marked benefit where the throat and tonsils are acutely inflamed and much swollen. They quickly mitigate irritation, liquefy tenacious mucus and lessen expectoration, and do not constipate. If a patient's cough is severe and irritating, two or three may be allowed in succession. He has used them in the early stages of mercurial salivation with wonderful benefit.

*Muco-Tonic.*—In regard to this troche it may be said with emphasis that no other combination has so many points of merit and is so effective in its action.

The writer has recently added to the original formula a small quantity of capsicum, and finds that the slight glow it produces increases their usefulness. And now, after an extended use of this combination, he finds its value both increased and confirmed. They are admirably adapted for allaying slight irritation of the throat and giving tone and flexibility to the vocal organs.

#### CHLORIDE OF ETHYL AND COCAINE IN MINOR SURGERY.

In the *Australian Medical Gazette* for June 15, 1894, PURSER has tried chloride of ethyl for the avulsion of a toe nail, and it acts splendidly. On many occasions he has seen it used for this with good results, also for cutting down upon needles in the hand and foot when they could be felt, for the removal of small cysts, etc. On two occasions he used it for opening an empyema, with good effect. In neither case was the pus stinking, and both recovered by being treated antiseptically and never being washed out. In both these cases the space between the ribs was ample to admit a good-sized drainage-tube, so that it was not necessary to resect a piece of rib; still, the author believes, had such been necessary, it would have acted just as well. He was first induced to try chloride of ethyl in a lad of fifteen or sixteen years of age. The patient was in a very debilitated condition, and was very nervous about the taking of chloroform, so much so that when the anæsthetist went to the ward to administer it, he was in such a hypersensitive condition that it was not deemed advisable to give it; and it being absolutely necessary

to remove the pus by drainage, the chloride of ethyl was resorted to, with the result mentioned. The other case was that of a man who had a broncho-pneumonia and pleurisy followed by empyema, and he was so enfeebled that he was not considered a fit subject for chloroform or ether. Very little of the drug has to be used, a minute or two sufficing to freeze the part sufficiently. It can be easily applied, and, provided everything is ready for the operation and no delay, the patient will feel nothing. It must be remembered, however, that afterwards, during the thawing of the part, so to speak, the pain felt by the patient may be very acute.

#### SUCCESSFUL FOOD FOR INFANTS.

This preparation is so simple that any one—even an ordinary housemaid—with fair habits of carefulness can make it with ease and certainty. It is prepared thus:

Mix a full teaspoonful of flour and half a cup of cold water; to this add twelve ounces of boiling water and boil for ten minutes in a double boiler. Remove the inner vessel and add to the mixture another twelve ounces of cold water and half a teaspoonful of maltine. Allow it to stand for fifteen minutes in order to let the diastase act upon the starch. Replace the vessel in the boiling water and boil again for fifteen minutes. This mixture, after being strained, should be added to an equal quantity of fresh milk. Naturally, one may change the proportion of milk according to individual cases.

Of ninety cases, seventy-seven were babies between the ages of three weeks and fourteen months. All of them were suffering with characteristic disorders of malnutrition or malassimilation, such as gastritis, enteritis, or both, "idiopathic atrophy," diseases of the skin traceable to visceral lesions, and one case of congested and enlarged liver of five weeks' duration, which became well with no additional treatment than dietary. Of these seventy-seven, sixty-three improved immediately and continued to thrive; thirteen required additional treatment; and one, although fed carefully, showed no improvement. This last child was tried on a wet-nurse and three other foods successively before the proper nourishment was found.

The other thirteen cases were children over fourteen months and under twenty-six months of age. They were suffering from various diseases associated with malassimilation caused by or coincident with the primary disease. All of

them within varying spaces of time took kindly to this food and thrived on it.—OPPENHEIM, in the *New York Medical Journal* for July 21, 1894.

#### SCOPOLAMINE.

HARVEY SMITH writes of the value of scopolamine in the *New York Medical Journal* of July 21, 1894. He says that had it been possible to compare the action of other mydriatics on patients upon whom the scopolamine had been tried, the deductions might have been more absolutely reliable; still, the writer thinks the observations so far made justify us in coming to the following conclusions:

1. That the toxic effect of scopolamine used in one-tenth- and one-fifth-per-cent. solutions is easily produced, but can readily be avoided if the lids be everted or the nasal ducts compressed at the time of instillation.

2. That in diseased conditions of the eye, scopolamine is quite as useful a drug as atropine.

3. That in refraction work complete and thorough paralysis of accommodation with the maximum of mydriasis can be produced in from twenty minutes to half an hour, where the drug is used *coup sur coup*, and that the duration of its effect is from five to eight days.

4. That its greatest value lies in the rapidity of its action, which renders it specially useful for purposes of examination in refraction cases and in diseased conditions of the interior of the eye.

#### THE ANTIPYRETIC TREATMENT OF ACUTE DISEASE.

In the *Practitioner* for July, 1894, RAVEN writes on this topic. He thinks it is not among well-meaning amateurs only that the mania for indiscriminate antipyresis prevails. There seems to be a school, consisting chiefly of very young men, who look upon a rise of temperature as a bad thing *per se*,—as a symptom that must, so far as possible, be put a stop to at once and regardless of any useful purpose that it may serve in the process of a febrile attack,—who, in the presence of pyrexia, resort to antipyretic drugs, to ice, or to cold packs or spongings as naturally as a duck takes to cold water. They would appear to ignore the possibility that a high temperature may be the index of the resistance of the organism to an invading poison, or they would scarcely wish to stop such a beneficent agency. From such practitioners a remark like the following may

commonly be heard: "I found the patient with a temperature of 102° F., so I gave him a dose of antipyrin." With an antipyretic at hand, even diagnosis becomes superfluous.

To exemplify the possible consequences of this kind of practice, take the following case: A child is presented who has a headache, aching limbs, and a high temperature. Nothing sufficiently definite is seen upon which to found a diagnosis, but the presence of the temperature justifies, in the doctor's opinion, the administration of antipyrin or antifebrin, or one of the numerous drugs of the kind that we have at our disposal. In twelve hours' time a white patch has appeared on the child's pharynx, and then resolves itself into one of membranous tonsillitis. Supposing that a depression of temperature has been effected, has it served any useful purpose? Is it not much more probable that it has been harmful? For, tracing the course of such cases, is it not found that a high initial temperature is generally followed by an early crisis and rapid recovery; whereas a much more serious and prolonged, or perhaps fatal, illness is likely to ensue when there is a subfebrile or even a subnormal temperature? It may be inferred that, so far from any beneficial result having been obtained by the dose of antipyrin, the effect has been merely an imitation—fortunately, a weak imitation—of the favorable type of the disease, and possibly an interference with the forces of the system to resist the attack. Again, take measles. Suppose that antipyretic drugs should be given during the period of pyrexia, could any doubt be entertained that the effect might be most prejudicial to the patient? Is not measles, with a sharp temperature accompanying a well-established rash, much more favorable in its immediate and remoter results than measles when the fever is slight and the symptoms but imperfectly developed? Cold bathing was once practised on a large scale during an epidemic of measles; it happened in Fiji. The natives, being attacked, flew into a state of panic and rushed into the sea; the mortality was enormous.

If, then, it be objectionable to treat tonsillitis and measles with antipyretics, the same may hold good with regard to many other acute diseases. These may appear fanciful instances to bring forward, but they are really not so. The young men who, in the author's personal experience, have been addicted to this process of reducing, or attempting to reduce, high temperatures whenever they have been met with, can hardly have excogitated the routine from their own inner consciousness. They must have

been trained somewhere. Undoubtedly we are at bottom empirics, willing to adopt any line of treatment that has been conclusively shown to be useful, though it should be unsupported by, or even opposed to, theory. Thus, no one will question the extreme value of salicylic acid in reducing the pyrexia, relieving the symptoms, and cutting short the progress of acute rheumatism. We do not know whether the salicylates have a direct action on the *materies morbi*, or whether the control of temperature is primarily their beneficial action; but we are content to employ the drug, thankful to have it at our command, and willing to wait until its action can be explained by some philosopher in the future. Again, experience teaches us that the action of quinine in ague is specific, whether in virtue of its antipyretic powers or of some other inherent properties, we do not know. Also in enteric fever, when the pyrexia is dangerously acute, or when it is unduly prolonged, the facts are sufficient to tell us that in antipyresis lies the safety of the patient.

But when an empirical procedure is less satisfactorily supported by facts, theoretical considerations should be allowed their due weight. Of all febrile diseases in which an antipyretic routine has theoretically no place, and practically a very uncertain and unproved one, pneumonia stands prominently forward. Acute pneumonia is defined as a specific fever, running a sharp and short course, characterized earlier or later in its progress by inflammation of more or less lung-tissue and by the presence of a bacterium—Fraenkel's diplococcus—supposed by many to be the *fons et origo mali*. It is believed that the presence of this microbe is the source of the fever and that the febrile action is in itself beneficial,—an agency by which the intruding germs are destroyed by the healthy cells of the body. The lung-substance appears to be the field upon which this battle between the invaders and the defenders is fought out. Pyrexia, then, is the natural result, the degree of which, within due limits, measures the resistance of the organism to the danger by which it is menaced. To attempt the reduction of temperature under such conditions, unless exceptional symptoms declare themselves, appears to be equivalent to ranging one's self on the side of the enemy, instead of joining in the defence. No doubt circumstances may arise under which antipyretic measures may be urgently demanded, as in hyperpyrexia, when the threatened ruin of the cardiac fibre presents an imminent danger, and in those cases when the pyrexia persists beyond the natural term of

the disease the employment of antipyresis may be reasonably considered. As yet no case has been made out for the use of antipyretic measures in ordinary cases of acute pneumonia. Some years ago the writer made a trial of aconite, and for a long time treated every case of acute pneumonia with this: 1 drop of the tincture was given every ten minutes for an hour, and then the same dose was given every hour for four and twenty hours. By this means he succeeded in controlling the temperature, but failed to observe any control of the disease. The application of ice-bags to the chest-wall over the site of the inflamed lung or portion of lung in acute pneumonia is strongly condemned. It is to be assumed that this practice has for its object the direct arrest of the inflammatory process going on in the lung. Now, before considering whether this design is a reasonable or a scientific one, what proof exists that a bag of ice placed in such a position that skin, subcutaneous tissue, bones, muscle, and two surfaces of pleura intervene between it and the lung,—what proof is there that the condition of the lung-substance can be altered by such a procedure? Is it not just as likely that, so far from the blood being diverted from the lung, it is driven into it by the influence of the ice on the surface? And if any advantage should be gained from such applications of ice, would it be certain that this resulted from artificial anæmia of the lung and not from a more copious blood-supply?

But, assuming for the sake of argument that the substance of the lung in acute pneumonia can by this means be subjected to a cooling and depletory process, what would be the beneficial influence over the course of the disease? Would such an effect upon the lung control the pyrexia? The answer to this question would appear to be in the negative, for the pyrexia of acute pneumonia, as has been clearly demonstrated, is not primarily nor mainly dependent upon the local inflammation. The conclusive arguments on this head can be briefly enumerated: 1. The pyrexia is as well marked and often at its highest before—and often long before—any inflammation of the lung exists. 2. Upon the disappearance of the fever, which is often quite sudden, no change is to be traced in the physical condition of the lung. 3. The intensity of the temperature is in no way commensurate with the amount of lung-tissue involved in inflammatory changes; on the contrary, a small area of inflamed lung is attended, as a rule, by a higher temperature than when a whole lobe is consolidated. The reasonable deduction, then, would appear to be that, far

from the inflammation of the lung in acute pneumonia being the cause of the illness, it is, in a manner, analogous to the rashes of the exanthemata, the channel through which the virus is eliminated, or the scene where the invading germs are killed by the defending cells of the organism. In this salutary process there must be inflammation, and woe betide the victims of acute pneumonia who, from old age, intemperance, starvation, or any other source of debility, are unable to offer a good inflammatory resistance to the attack of the malady. Mr. Frederick Treves, in his admirable Lettsomian lectures on peritonitis, puts the following proposition, startling enough to any one, but doubly, trebly startling to the antipyretist: "It may be assumed," says Mr. Treves, "that within a month or so from the disappearance of inflammation from the business of the body, the human race would become extinct." The beneficial effect, then, of subduing inflammation of the lung in acute pneumonia by means of ice-bags, even supposing it possible, appears to be problematical. One thing, however, is not problematical, but certain, and that is, that if ice applied in this way is useful, then the employment of hot poultices must be injurious. You cannot blow hot and cold in this matter. The writer is not prepared to admit that the employment of hot applications for the relief of pain in these cases has any bad effect, and so far, upon the evidence, he is not inclined to relinquish it. It is to be noticed that the preponderance of opinion is that the effect that ice-bags so employed may produce must be attributed to the general lowering of temperature rather than to any impression exercised on the lung itself; and as the general antipyretic treatment of acute pneumonia finds but few supporters, there appears to be no inducement to adopt this ice method on any grounds. Of course there are excellent statistics to support it. All new methods of treatment, however quickly they are exploded, present most encouraging figures. In this matter, however, the statistics are vitiated by the avowal that this line of treatment is not adapted for weakly constitutions. Give any man a series of cases of acute pneumonia occurring in otherwise healthy and strong subjects, and he will show most favorable figures from treatment with peppermint-water.

What the writer has endeavored to convey is not so much objection to antipyresis as to indiscriminate antipyresis; that process of reducing high temperatures, often prior to diagnosis, regardless of their import and their possible utility; of treating a single symptom

instead of regarding its source,—a practice which appears to savor rather of the unspeakable methods of the homœopath than of the science of the physician.

#### TREATMENT OF DELIRIUM TREMENS.

In the *New York Medical Journal* for July 21, 1894, BELLAMY concludes an article as follows:

1. Delirium was controlled with greater rapidity and safety by trional than by other hypnotics.
2. In the majority of cases a marked stimulant effect was observed, possibly on account of the methylic and ethylic elements which enter into the composition of the drug.
3. On account of the low temperature noted in all cases, trional must possess antipyretic properties, thereby simulating its allies of the phenol group.
4. It was always well borne by the stomach, and in one case was rapidly absorbed when administered per rectum.
5. No unpleasant after-effects were observed, and in all cases recovery was speedy, with the exception of two.

#### TREATMENT OF PUERPERAL SEPTICÆMIA.

MADDEN writes for the *Medical Press and Circular* of June 27, 1894, on this subject.

The prophylaxis of puerperal septicæmia largely depends on the sanitation and maintenance of the constitutional condition of our obstetric clients by judicious hygienic and dietetic measures maintained by ferruginous tonics throughout the latter months of pregnancy; secondly, the vital importance of asepsis in everything relating to the patient, her surroundings and her attendants during delivery, and the puerperium cannot be too strongly insisted on. At an early period during labor, and again before its termination, if protracted, as well as after delivery, the vagina should be washed out by warm antiseptic irrigation with either carbolic (1 in 40), boric acid (1 in 25), or lysol (1 in 100) solution. The 1 in 2000 bichloride of mercury solution recommended by some authorities, although a potent germicide, is an unsafe uterine application after delivery, and is here mentioned only to be condemned for that purpose. But for the cleansing of the external genitalia during or after labor, a 1 in 1000 solution of this salt may be employed by means of wood-wool pads, which

should be destroyed immediately after use. The routine practice of merely dipping the hands in an antiseptic solution before touching the lying-in woman is only valuable as an adjunct to absolute cleanliness, and without the latter, as too often employed, utterly delusive as a safeguard against sepsis, and therefore far worse than useless. Such obstetric manual cleanliness as is essential before any vaginal examination or contact with the lying-in or puerperal patient can only be secured by diligent hand-scrubbing with clean hot water and soap, by means of the nail-brush, after which, and not before, the hand may and should be immersed in the antiseptic solution prior to touching the patient.

Thirdly, on the completion of labor, and, above all, more especially whenever that has been tedious, instrumental, difficult, or complicated, the uterine cavity, as well as the vagina, should be thoroughly flushed out with hot boric or carbolic solution, or peroxide of hydrogen. For this purpose the irrigator should invariably be employed, as the ordinary siphon syringe, when misused for uterine injection shortly after delivery, is extremely liable, as exemplified by cases referred to by the writer, to force the injected fluid, or even air, through the Fallopian tubes, giving rise to metro-peritonitis, or into the then patulous uterine sinuses, and may thus possibly occasion death from embolism.

Although the prevention rather than the treatment of puerperal septicæmia is the object to which the obstetrician may most profitably direct his attention, the latter subject cannot be here omitted from consideration, and must be chiefly guided by the special type of the disease, as well as by the predominant symptoms and condition of the patient in each instance. In the now more prevalent typhoid form of puerperal fever, the disease is distinctly of a remittent character, as shown in several clinical charts exhibited. For its treatment, free stimulation, suitable nutrition, and strict asepsis by local irrigation of the urethro-genital tract are essential; while, in the way of medicine, there are only three drugs which appear to the writer as possessing any approach to specific remedial or germicidal action in such cases,—viz., quinine, sulphurous acid, and turpentine.

In all cases of puerperal fever in which the use of rectified spirits of turpentine may be tolerated by the stomach and bowels, the writer believes that no other remedy is of such general utility as this, the efficacy of which (like so many other obstetric ideas the credit

of which has been given to modern foreign authorities) was originally demonstrated in Dublin by a long-forgotten Irish practitioner, Dr. Brennan, upward of eighty years ago. The remedial action of turpentine in appropriate cases of puerperal fever the author has proved, and ascribes to the probable germicidal potency of the drug no less than to the effect of a powerful stimulant. Besides, there are other agents available in accordance with the special symptoms and stage of the disease and condition of the patient in each case, which need not be referred to, as their employment must obviously be directed by the broad principles of general therapeutics. In the earlier stage of puerperal fever no remedy has afforded such advantage in reducing temperature and pulse-rate, unlocking pent-up lochial and mammary secretions, inducing sleep and tranquillizing the patient, as phenazone (antipyrin) in small and repeated doses. The effects thus produced are, however, too frequently but temporary, and in the latter stages of puerperal septicæmia, or where from the first the intensity of the puerperal septicæmic intoxication and consequent prostration are most marked, then, it is almost needless to add, antipyrin is distinctly contra-indicated.

#### *APOCYNUM CANNABINUM IN HEART-DISEASE.*

A. G. GLINSKI (*Vratch*, Nos. 6 and 7, 1894), after having proved by experiments on cold-blooded and warm-blooded animals that the root of the *Apocynum cannabinum* contains a strong poison which in large doses paralyzes the heart, and when given in small quantities retards and strengthens its beats, decided to take it himself, as he is suffering from hypertrophy of the left ventricle, with intercurrent attacks of dilatation of the organ, mitral murmur, dyspnoea, etc. The dose was 15 drops of the fluid extract three times a day. As he found that all his symptoms disappeared in two days, he gave it also to other patients in the same quantity in cases of palpitation, disturbed compensation, in which strophanthus and adonis vernalis had failed and digitalis seemed contraindicated. He gives a full account of some of his cases, and summarizes his experience in the following conclusions:

1. The action of the root of *Apocynum cannabinum* is similar to that of digitalis without being cumulative.
2. In cases of dilatation the fluid extract rapidly diminishes the area of dulness.
3. It increases the daily amount of urine.

stops the palpitation, and promotes the absorption of transudations.

4. With the exception of increased pulsation of the arteries of the head, it has no bad secondary effects. It was used either in the form of a decoction (1 drachm to 8 ounces) three to four tablespoonfuls a day, or tincture (1 in 10) 5 to 10 minims three to four times daily, or fluid extract in doses of 10 minims to  $\frac{1}{2}$  teaspoonful three times daily.—*British Medical Journal*, June 23, 1894.

#### QUININE AMBLYOPIA.

From the study of this subject, CLAIBORNE thinks the following conclusions may be drawn :

1. Quinine in toxic doses may produce blindness.
2. The toxic dose is distinctly indeterminate.
3. The duration of the amaurosis varies largely.
4. The field of vision remains contracted.
5. Central vision usually returns to the normal.
6. There is color-blindness at first ; the color perception is ultimately restored within the central field.
7. The ophthalmoscopic picture is that of white atrophy.
8. Experiments on dogs show that there is atrophy of the entire optic tract.
9. The same experiments show that the cells of the cuneus are probably not affected.
10. Treatment is of no avail.—*New York Medical Journal*, June 30, 1894.

#### TREATMENT OF TYPHOID FEVER.

OSLER ("Johns Hopkins Hospital Reports," vol. iv., No. 1) states that two hundred and twenty-nine cases of typhoid fever have been treated in the hospital. The cases in the first year (thirty-three in number) were treated symptomatically ; they yielded a mortality of 24.2 per cent. The remaining cases were subjected to the cold-bath treatment, and yielded a mortality of 7.1 per cent. The cases in the first year were of unusual severity, but the mortality under the cold-bath treatment was very favorable when compared with the average mortality in hospitals in America, which, according to Osler, ranges from ten to fifteen per cent. A bath at 70° F. was given every third hour, when the temperature taken in the rectum was 102.5° F. or over. If the fever was very slightly

colder (65° F.). The temperature was taken half an hour after the bath, and again three hours after. If then above 102.5° F. the bath is repeated. The frequency of the baths thus depended on the severity of the case ; the average number in the twenty-four hours was four, but the maximum number (eight) was often given. The patient was lifted into the bath covered with a sheet or with a napkin round the loins. Cold effusions to the head during the bath were regarded as important, especially in cases with marked nervous symptoms. A cloth wrung out of ice-water was placed upon the head, and the head and face bathed with a sponge wet with the same water. The trunk and limbs were rubbed during the bath with a cloth or bath-rubber ; this was found to counteract the shivering and tendency to cyanosis. The usual duration of the bath was twenty minutes, but in feeble patients the duration was reduced when there were signs of increasing weakness. Brand's injunction to begin the treatment at the very beginning of the disease could not be carried out in the majority of cases, as only ninety-five cases were admitted in the first week, and most of these at the end of it. Half an hour after the bath the temperature was found to have been lowered from 1° to 3° F., but, as a rule, during the height of the disease, in two hours more the temperature had risen again to its former height. In "not a few cases" the bath at 65° F. had very little influence in reducing the fever, and in none was it found possible to keep a patient afebrile. In some cases, particularly in children, and at a late stage (third week) in adults, the bath at 70° F. brought the temperature down to normal, or to 96° or 95° F. The bath has a tonic effect on the circulatory system, especially in the early stage of the fever ; it seems to be exercised as much on the peripheral arterial system as on the heart. The most striking effects of the bath are on the nervous system : headache is relieved ; the patient sleeps well ; tremor, delirium stupor, and coma are rare. In the series reported only thirteen presented marked nervous symptoms. The dry, brown tongue and gastric irritation are less often seen. Speaking generally, the "typhoid state" is not nearly so frequent under the cold-bath treatment, which appears also to have an influence in diminishing diarrhæa and tympanites. In the series reported, hemorrhage and perforation were more frequent, and relapse more often observed in those treated by the cold-bath treatment, but this may have been accidental, and, as has been stated, the general mortality was much lower. Complica-



tions were rare, with the exception of boils, which were frequent. The baths do not aggravate the preliminary bronchitis and do not induce pneumonia or pleurisy.—*British Medical Journal*, June 23, 1894.

#### TREATMENT OF TRAUMATIC SHOCK.

T. S. K. MORTON writes in the *Polyclinic* of June 30, 1894, on shock. He thinks external applications of heat easily take precedence of all measures for treatment of shock. If the clothing be wet, it should be hastily removed. If not, it may be removed from one part at a time, while to others warmth is continuously applied. The apartment in which the patient lies should be heated to 90° F., or even 100° F., if possible. He should be placed in proximity to fires if impracticable to remove him to more suitable surroundings. Blankets should be heated to a high degree in an oven or otherwise, and be wrapped about each part, while more blankets should be tucked in over all. Hot-water bottles or cans should then be packed in all about, but scrupulous care must be taken that the patient be not burned by them. Burns from this cause are distressingly frequent even in the best-conducted hospitals. The tissues during shock appear to be far less resistant to heat than in health, while the sensations are benumbed; hence very severe burns may result in an incredibly short time from even moderately-heated bottles. An additional safeguard is to wrap each bottle in a separate piece of blanket, and never to permit them to come into immediate contact with the skin. A hot bath, if attainable, is a most efficient means of combating shock. This may be made of 90° F., the patient put in, and then more hot water added until a temperature of 100° to 110° F. is reached. For measuring this a thermometer should be employed. If a water-bed is available, it may be filled with water of 120° F., a light blanket thrown over, and the patient placed upon it. To prevent shock during operations, steam and hot-water operating-tables have been devised.

Rectal injections of water of 110° F. are exceedingly useful. Large amounts of caloric may thus be thrown into contact with the great viscera and abdominal nerve plexus, if the injection is slowly given, and particularly if the rectal tube (inserted beyond the sigmoid flexure of the rectum) is employed.

Very hot drinks are also useful in amounts not exceeding two ounces, frequently repeated if the patient can swallow, but are neither so

efficient in relieving shock and thirst nor in supplying a circulating medium in cases of hemorrhage as are the enemata.

A method of applying hot air to a shocked person, which can readily be adapted and is exceedingly efficient, is to raise the bedclothes by a few barrel-hoops. Then procure a couple of pieces of stove-pipe with a right-angle joint. Insert the horizontal end of the pipe under the bedclothes at the foot of the bed, well above the patient's feet (which otherwise might be burned), and under the vertical end place an alcohol or other lamp. The heated air from the lamp will ascend through the pipe and surround the patient to his neck with a heated atmosphere. A more elegantly constructed appliance of this description has done valiant service in the Polyclinic Hospital.

While heat is being applied, frictions may also be resorted to with good effect. For this a hand is inserted under the snugly tucked in blankets, and one extremity after another is rubbed and kneaded towards the heart. Several persons may be thus employed upon different parts, caution being urged that no cold air meanwhile be admitted under the covers. To make these manipulations more efficient in stimulating the cutaneous circulation, a little table salt, mustard, or turpentine may be rubbed in.

Large mustard-plasters or turpentine stupes placed over chest and abdomen likewise greatly aid in restoring the shocked subject.

Where hemorrhage has been marked, transfusion of hot saline solution (common salt six-tenths per cent. in distilled water, boiled and cooled to 105° F.) is imperatively called for. It may be slowly thrown into a vein to the amount of one to three pints, according to the quantity of blood lost, by a syringe, or from an ordinary sterilized douche-bag and canula. The internal saphena vein as it crosses the internal malleolus is a favorite point for its introduction. This vessel is difficult to locate in a collapsed subject, but may generally be made to stand out sufficiently to be identified by the application of a band or tourniquet loosely to the lower thigh or by depression of the member over the side of the bed. The pulse or heart-action must be the guide for the amount to be injected. Prompt response by that organ is the rule, but if no cardiac response takes place, not more than three pints should be employed at one time; the canula may be left in place, and more solution be used at a later period, if required.

The heart may also be stimulated and the

circulation of the nerve-centres and great viscera be improved by elevation of the lower extremities. We have known success to follow almost complete inversion by tying the feet to the end of the bed, and then raising the foot-board to an almost vertical position. Bandaging all of the extremities has a similar effect. Artificial respiration also is occasionally efficient in prolonging the vital spark until the equilibrium of the nervous and vascular systems is re-established. Electrical stimulation of the heart may be tried.

Operations, transportation, or other manipulations calculated to renew or prolong shock should never, except under the most exceptional circumstances, be undertaken until reaction is fully established and the temperature has reached normal or, better, gone considerably beyond. Violation of this rule is accountable for the terrible mortality of major operations for traumatism in the hands of those doing but occasional surgery.

Food should not be administered until reaction has well advanced (as shown by a temperature rising towards the normal), as digestion is suspended during shock, and prompt vomiting or decomposition would quickly result. It is questionable whether the benefits of irrigation of the stomach with hot water are not counterbalanced by the additional shock induced by the passage of the stomach-tube, unless much food is present and can be removed at the same time. When reaction is almost established (temperature 98° F. and over), hot beef-tea and two-drachm doses of diffusible stimulant, as brandy or whiskey, well diluted, are permissible and efficacious. But for some time after reaction, food must be of the most absorbent character, that it may be handled by the enfeebled digestive organs. Peptones, peptonized milk, beef-tea, and strong coffee, always hot, then become available. These may also be administered by rectum, at intervals of not less than four hours, and considerably diluted. For the latter purpose the following formula is satisfactory: Liquid beef and bread peptonates,  $\frac{1}{2}$  ounce; peptonized milk, 2 ounces; hot water,  $3\frac{1}{2}$  ounces. To this two drachms of stimulant (brandy or whiskey) may be added in addition to the sherry found in most of the liquid peptone preparations on the market, if the rectum proves retentive.

Of the drugs which we have come to rely upon in treating shock, may be mentioned atropine, strychnine, ammonia, digitalis, morphine, oxygen, ether.

If pain is present,  $\frac{1}{4}$  grain of morphine with

$\frac{1}{16}$  grain of atropine, hypodermically, is efficient; the atropine is always called for, with a smaller dose of morphine in cases where pain is not a feature.

Strychnine may be given in  $\frac{1}{16}$ -grain dose by hypodermic in conjunction with the above, and is certainly a powerful stimulant.

Digitalis is used in 10-minim subcutaneous doses, more as the effect of the previously administered drugs begins to pass away, in order to maintain the effect upon the circulation for a prolonged period.

Pure ammonia is very useful as an inhalant, a few drops upon a little absorbent cotton being held to the nostrils for an inspiration or two several times a minute, until other remedies begin to take effect. Oxygen, if at hand, is one of the most powerful, yet safe, remedies that we possess; through a mask or tube the patient is permitted to inhale the pure gas for a half-dozen or more respirations in each minute.

For very quick but transitory effect, a hypodermicful of ether or brandy, or even aromatic spirits of ammonia, is very satisfactory, unless the patient has been under ether anæsthesia. In this case resort should not be had to the two former agents.

It is important in treating shock that too many drugs or too many individual remedies be not employed. Poisoning must frequently take away a last chance from the patient, where repeated doses of powerful medicines are indiscriminately given in the excitement incident to a desperate case. Remedies even here must be used with discretion and doses be graduated by effects.

#### THE NEW TREATMENT OF DIPHTHERIA.

It seems likely that yet a new boon to humanity may ere long be anticipated from recent knowledge gained by experimental research. Sir Henry Roscoe's interesting and able speech at the recent meeting of the National Health Society at Grosvenor House directed public attention to the remarkable results obtained by Ehrlich, Kossel, and Wassermann in the treatment of diphtheria. A full summary of these was given in the *British Medical Journal* of May 5. They deserve to be put to the test in this country as soon as possible. Various investigations have recently been made, especially by Behring and Kitasato, on the antitoxins of tetanus and diphtheria, and they found that a substance was present in the blood-serum of immune animals which had the power of conferring a certain degree of immunity in other animals, and even of arresting the disease when

it had begun. These facts were applied by Tizzoni and Cattani to the treatment of tetanus in man, but with only imperfect results. The authors have followed the same lines in applying the method in the treatment of diphtheria, but they have taken special measures to obtain a particularly powerful antitoxin for the purpose. They began with producing immunity in goats by injecting increasing quantities of boiled cultivations of diphtheria bacilli, and the degree of immunity was subsequently further increased by injecting larger and larger quantities of extremely virulent cultivations of diphtheria bacilli. The serum of these animals thus contained large quantities of the antitoxin, and before going further they devised a method of measuring accurately the exact amount present. It had been found by Behring and Kitasato that, if the poison and the serum antipoison were mixed together in a test-tube in proper proportions, they neutralized each other, and that the mixture when subsequently injected into an animal was inert. They took as a standard of the poison a material of which .3 gramme per 1000 grammes of the body-weight was a certainly fatal dose. For animals of two hundred to three hundred grammes' weight they used ten times this amount,—namely, eight cubic centimetres,—and then added to this two, three, four grammes, etc., of the serum to be tested. The mixtures were then immediately injected into a series of guinea-pigs, and if the poison had not been completely neutralized, this was evidenced in twenty-four or forty-eight hours by local infiltration at the seat of injection and by loss of body-weight. In this way the exact amount of any given serum required to neutralize .8 gramme of poison was ascertained. As the unit of immunity they take serum, of which 1.5 milligrammes neutralizes .8 gramme of poison, and in the treatment of children they employed a quantity of serum containing an amount of antitoxin representing one hundred and thirty to two hundred immunity units.

The investigations were carried out on two hundred and twenty children suffering from diphtheria (proved by bacteriological examination) at all stages and in various hospitals in Berlin. The rough result is that of these two hundred and twenty cases, of which sixty-seven had already required tracheotomy before the treatment was commenced, fifty-two died and one hundred and sixty-eight recovered. Of the one hundred and fifty-three cases in which tracheotomy was not performed, only twenty-two, or 14.3 per cent., died, the cause of death in these instances being in eight sepsis, in

seven pneumonia, in six complications, such as paralysis and nephritis, and in one acute tuberculosis. Of the sixty-seven cases in which tracheotomy was done, thirty, or 44.9 per cent., died, the cause of death being in four sepsis, in twenty-three pneumonia, in two sequelæ, and in one acute tuberculosis. Many of these cases were, however, admitted several days after the disease had commenced and when there was hardly any hope of saving them. The results are very striking, if they are considered in relation to the duration of the disease. Six cases were admitted during the first twenty-four hours, and all recovered; sixty-six were admitted the second day, and only two died. Thus, of seventy-two cases admitted during the first forty-eight hours, only two died. Of these seventy-two cases, tracheotomy was necessary in nine, and the two which died were two of those in which tracheotomy was performed. On the third day twenty-nine cases were admitted, and of these four died; on the fourth day thirty-nine, of which nine died; on the fifth day twenty-three, of which ten died. The percentages of recovery, according to the day of admission after the disease commenced, were, therefore, one hundred, ninety-seven, eighty-six, seventy-seven, fifty-six and one-half per cent., etc.

In most of these cases only a single injection was made, but subsequently, in bad cases, several injections were employed, and the authors think that they might have saved some of those who died, especially from sequelæ (paralysis, etc.), if they had used repeated injections.

Before using the material, it was first ascertained that it was quite innocuous and produced no effect when injected into a healthy individual. When injected in cases of diphtheria, it was only when large amounts were employed that any immediate effect on the pulse or temperature was observed, but in a certain number of cases there was an almost critical fall of temperature and pulse on the day after the injection. The authors explain the fact that, as a rule, the temperature does not immediately fall, because it is only in the very early stage that the disease is pure, and it very soon becomes complicated with septic bacteria, which keeps up the temperature, although the diphtheritic poison has been neutralized. The authors' conclusions are as follows:

1. The fate of the patients depends on the treatment during the first three days of the disease; hence the serum should be injected as soon as possible after its commencement.

2. In mild cases the amount introduced should be at least two hundred immunity

units; in severe cases and in those where tracheotomy is necessary, four hundred units.

3. The injections should be repeated on the same or the following day, according to the general and local symptoms, the total amount varying, according to the severity of the case, from five hundred to fifteen hundred immunity units. In thirty cases where repeated injections were employed, some of them very severe cases, sixteen of them requiring tracheotomy, only four died, these four having had tracheotomy done, with little or no relief to the breathing.

Full details of the methods and cases will be published as soon as possible, and it is to be hoped that this method will be put to the test elsewhere as soon as possible. Already it is being tried in Paris with most satisfactory results.—*British Medical Journal*, June 23, 1894.

#### CHLORAL HYDRATE.

BRODNAX contributes a paper on chloral to the *Polyclinic* of June 30, 1894, of which a part follows:

As an hypnotic, 5 grains of chloral combined with laudanum or with  $\frac{1}{8}$  or  $\frac{1}{4}$  grain of morphine acts splendidly, this combination intensifying the effect of each and depriving the opiate of its stimulating property. With children, by itself, in sweetened water, it has no equal; mixed with paregoric, it is also good.

It is prepared as follows: Cover the amount in a case-vial with glycerin; this dissolves it, and a drop is about a grain. In this form it mixes readily with oil or water, and is more quickly prepared, and more easily divided into doses, large or small. With castor oil the dose 1 to 5 grains renders it less nauseating, and does not gripe, at the same time producing quiet and rest.

Applied to the skin in eruptive diseases (measles, urticaria) as follows: chloral, 10 grains (drops); carbolic acid, 10 grains (drops); water or oil, 1 to 2 ounces, almost instant relief is experienced of the intense itchings; or chloral, 10 drops; glycerin and water, each  $\frac{1}{2}$  ounce, produce the same effect.

As a mouth-wash: Chloral, 10 grains, glycerin and water, each  $\frac{1}{2}$  ounce; a teaspoonful produces a pleasant cool sensation in salivation, as a gargle. After holding it for a moment in the mouth, it should be rejected and an equal amount of the fresh solution may be swallowed. Carbolic acid (10 drops) added makes it more effective in ulceration of the mucous coverings. It seems to act on the nerves locally,

the same as chloroform by inhalation does on the body.

In toothache: Chloral, camphor, glycerin, carbolic acid, equal quantities, applied on a small piece of cotton, after cleaning the cavity, will relieve the pain. (Cover with more cotton to fill the cavity.) If the patient has lost sleep, the author gives a full dose of chloral by the mouth.

For ulcerated sore throat, or ulceration from any cause, such as scalds: Chloral, 10 to 15 drops (grains); water, 1 to 2 ounces, as to age; sugar, to make it palatable to children; a teaspoonful, repeated at short intervals until sleep is induced, then in waking to keep them fully under its influence.

Earache: Camphor, 10 grains; chloral, 10 grains; carbolic acid, 10 grains; castor oil,  $\frac{1}{2}$  ounce. Drop into the ear warm. Fill the ear full, apply a piece of cotton wet in warm water to fill the external ear, then a cloth wrung out in hot water as warm as can be borne.

As an aid to chloroform in surgery or obstetrics, 10 to 15 grains, given twenty minutes before administration of the anæsthetic, seems to intensify the effect, and less than one-half of it is needed to produce the desired effect. In the writer's obstetric practice for the last fifteen years he has used it, and has observed but one case where any unpleasant effects were induced. This was in a woman with her tenth child. He gave the chloral to relax the system (10 grains); in half an hour 5 grains more; in half an hour the chloroform. It affected her almost immediately, and the child advanced and came away in good style, but the woman seemed to be dead drunk and incapable of moving herself. She slept soundly for several hours and awoke all right. She was conscious and would answer questions, but could not move herself. This was the first time she had taken either of the drugs, and she may have been susceptible. Chloral, given before the anæsthetic, seems to tide them over the excited stage of anæsthesia. The first few whiffs of the anæsthetic produce quiet without any excitement. He has used it in a few surgical cases with the same effect. In children, a full dose of chloral, and when sleep comes on they are anæsthetized in that state, and the force often otherwise necessary is avoided.

In coryza, where the Schneiderian membrane is very irritable, chloral, 10 grains (or drops); castor oil,  $\frac{1}{2}$  ounce, used with a soft mop, applied over the surface, after being dried, acts to check the excretion of mucus and lulls the irritation and the head-pains.

The supposed influence of the drug on the heart has not been noticed. In any case where there is a chance of any cardiac trouble, it is an easy matter to fortify the heart with  $\frac{1}{10}$  grain of nitro-glycerin. In none of the author's cases has the chloral "habit" been contracted.

#### A METHOD FOR THE ESTIMATION OF ANTIPYRIN.

Having had occasion to determine the amount of antipyrin in admixture with caffeine, which had been "shaken out" with chloroform from a proprietary headache liquid, it was found desirable to estimate the antipyrin without separating from the caffeine. Accordingly, the following reaction was made the basis of a calorimetric method:

When sodium nitrite is added to an acidified, dilute solution of antipyrin, a blue-green color is produced, which is still perceptible in dilutions of 1 in 20,000. In more concentrated solutions a crystalline precipitate of the same color is formed.

These results are due to the reaction between the liberated nitrous acid and the antipyrin, by which a compound is formed that has been shown to be nitroso-antipyrin.

It was determined that a standard solution, that will not turn yellow or fade in from twelve to twenty-four hours, can be made by dissolving .02 gramme of antipyrin in twenty-five cubic centimetres of water, adding 1.6 cubic centimetres of one-per-cent. sulphuric acid, and a cubic centimetre of one-per-cent. solution of sodium nitrite, and then diluting to one hundred cubic centimetres.

When preparing a solution of an unknown amount, for comparison with the standard, a few preliminary trials must be made to determine the amount of reagents required to fully develop the color and not be in such excess as to produce a yellowish tinge in the time required.

To avoid precipitation, the solution must not be more concentrated than 1 in 500.

When thus properly prepared, the solution can be diluted until the color corresponds exactly with that of the standard.

A little calculation will then show the amount of antipyrin present.

Tubes or beakers of white glass placed upon a white surface are convenient for the color comparisons.

Since the reagents employed do not react with other substances, except pyrazolone compounds, which are not of frequent occurrence, and as antipyrin is readily extracted from mix-

tures by the use of chloroform, this method admits of wide application.

It may also be mentioned that as this reaction does not take place in the presence of nitrites, but requires free nitrous acid, the incompatibility of antipyrin and (acid) sweet spirit of nitre may be prevented by having the spirit neutral or neutralizing with potassium bicarbonate.—SCHAAK, *American Journal of Pharmacy*, July, 1894.

#### ON THE TREATMENT OF CERTAIN FORMS OF ADVANCED CANCER OF THE UTERUS.

In the compass of this paper the author confines his remarks to the treatment of those forms of cancer of the uterus that, on account of the extent of the disease, are totally unsuitable for any form of operative interference,—that is, vaginal hysterectomy or supravaginal amputation of the cervix.

He comes to the conclusion that for practical purposes we may divide these diseases into three divisions.

1. Those in which the disease is limited to the uterus, this organ being movable and readily drawn down to the vulva.

2. Those cases in which the disease had extended beyond the neck of the uterus into the surrounding cellular tissue, thus more or less fixing the uterus in this situation, and perhaps the roof of the vagina being slightly involved.

3. Those cases in which the disease extended beyond the above limits, invading the vagina and possibly the bladder or rectum, or indeed both these organs.

It is to the treatment of the two latter forms of the disease to which he alludes, and he disposes first of those cases included in the third division first.

When the disease has extended to the vaginal walls, implicating the bladder and rectum, nothing but purely palliative measures can be adopted. Our aim must be to make these poor women as comfortable as possible by relieving their pain and keeping the parts as clean and sweet as we can. To accomplish the first object there is nothing which answers so well as morphine and belladonna suppositories introduced several times a day, if necessary. He has found relief given in many of these cases by, in the first place, syringing the vagina thoroughly well out with a solution of iodine and water, and here it should be stated that this be done through a speculum. The writer has specula of different lengths, so that if the vagina is much involved he can introduce a short one, such as will permit as good a view as possible.

Having syringed the parts as thoroughly as possible, he proceeds with dry tampons of cotton wool to wipe the parts well, removing as much as possible of the sloughy *débris*, which is sure to be present, and finally he applies a solution of chromic acid (2 drachms to 1 ounce) to all the diseased surfaces, being careful not to allow this solution to run on to the healthy tissues. These are protected by applying a saturated solution of bicarbonate of sodium. Finally, a long strip of gauze is introduced and a morphine suppository placed in the rectum.

The vagina is kept syringed out with some antiseptic solution some three times a day. In a few days a quantity of sloughy material will come away and the discharge be very much less offensive, and the pain will be relieved in every case in a most marked degree. The patient improves in general health and the appetite returns. For after-treatment he adopts the plan of inserting a small ball filled with iodoform or iodol, and a strip of iodoform gauze attached to it; this has the effect of keeping the parts wonderfully clean. With respect to medical treatment, our great aim must be directed to giving tonics, keeping the bowels regularly opened, and improving the general tone of the patient as much as possible. Tabloids of Chian turpentine and ichthyol are useful.

In those cases included under the second division, however, there is a much brighter outlook, and it is in these cases that we can hope not only to give relief, but to remove the diseased parts almost as surely and as effectually as we do in those cases which are suitable for complete or partial extirpation.

It must be borne in mind that the post-mortem examination of a number of cases showed that the disease was limited to the cervix and os. In other cases the body was implicated, but very rarely to such an extent as the cervix, thus pointing to the supposition that the disease usually commenced in the cervical canal and then extended outward to the cellular tissue beyond. It must be further borne in mind that only in some of the very advanced cases did the patient suffer from secondary growths, although it is true that there were quite a number who had their lumbar and sacral glands infiltrated with the disease, but in many of these cases the glands did not appear as if they had long been affected. We may, therefore, in this class of disease look upon it as purely a local affection, and we may hope if we can remove the growth that our patients may recover, and possibly be radically cured.

The plan that commended itself most to the writer was that practised by Dr. Marion Sims; the thorough clearing out of the advanced disease, however, appeared to him of paramount importance. The curettes which were adopted by this surgeon and by others did not commend themselves; in fact, disaster followed their use. The author has seen on more than one occasion the curette passed completely through the uterine wall into the peritoneal cavity; moreover, after the uterus has been apparently thoroughly curetted, on examining the surface it has been rough and uneven, with ridges here and there; in fact, these curettes were ill adapted to the purpose. Bell's dredgers also proved inefficient, as they were too pliable and their calibre was too small. The writer then decided to have an instrument constructed somewhat after the principle of Bell's dredger, by which the cutting blades could be increased in size by means of a screw in the handle, and furnished with watch-spring knives so shaped as to enable him to scrape out the contents of the uterus by simple rotation. It is worked by means of a screw. By means of this screw the blades, which when first introduced lie flat on the central rod, are made gradually to expand until they represent an area of about one and a half inches in diameter. Here was furnished an instrument by means of which the writer was enabled to remove the whole contents of the uterus with comparative ease, and as the blades are not too sharp, no mischief can be done with them, and very little bleeding follows its use. By using this instrument a perfectly smooth, even surface is left, and this is of the greatest importance, as, if the surface is uneven, the application of the caustic is rendered uncertain and unequal, as in those parts which are elevated it would naturally penetrate very much less deeply than in the depression.

The writer advocates as a caustic absorbent wool soaked in a solution of chloride of zinc. There is, however, a great difficulty in getting this wool prepared strong enough, as if a saturated solution is used the wool becomes unevenly saturated, and it is knobby and hard. After saturation the wool is carefully dried and kept in a firmly-stoppered bottle ready for use. In very bad cases a paste of chloride of zinc is used, prepared at the time of operation, and the wool soaked in the paste, getting it as dry as possible by squeezing it out in a piece of gauze and then packing the cavity which has been cleared out with it. Great care has to be exercised in packing to prevent the caustic from running over the healthy vaginal walls.

In applying the dredger, the patient, being thoroughly anesthetized, is placed in the lithotomy position with Clover's crutch. The vagina is then thoroughly irrigated with carbolyzed water, a Sim's speculum being introduced. By means of stick sponges the vagina is then dried. The dredger closed is now passed into the diseased canal and rotated from left to right. At the same time the blades are opened by means of the screw in the handle. The dredger very shortly becomes full of broken-down diseased tissue. This is readily removed by rinsing the blades in a basin of warm carbolyzed water. It is then reintroduced and the blades slowly opened, the instrument being removed from time to time and rinsed until it is found that the parts from whence the disease has been removed presents a perfectly smooth surface. There is usually but little bleeding, nothing more in fact than a general oozing. This is readily arrested by having some water as hot as possible and by means of stick sponges applying this to the cavity; when this is found to be fairly dry, the process of packing commences. Should there be much bleeding, it will be advisable to check this either by touching with Paquelin's cautery, or plugging with gauze firmly, or applying perchloride of iron lint. In this case the packing with the zinc-wool must be postponed until the next day, when it can readily be done in the ward.

Packing is best done by having very small pieces of the wool and packing these in with uterine forceps, an assistant steadying the uterus by pressure above the pubes. It is astonishing what a quantity of wool can be packed in these cavities. When the cavity is quite firmly filled, a ring pessary with rubber diaphragm is placed over the mouth. The object of this is to prevent the action of the chloride of zinc at the orifice from being neutralized. The vagina is now plugged with tampons of wool soaked in a saturated solution of carbonate of sodium. The writer finds it a good plan to introduce one tampon thoroughly soaked and allow it to remain in for a few minutes, and then remove it so as to neutralize any of the caustic which may have leaked onto the vaginal wall. Three or four plugs, soaked, are now passed into the vagina, and here again it will be found a great convenience if they are tied together in the form of a kite's tail, as it saves so much trouble when removing them. The patient is now returned to bed.

The next day the carbonate of sodium tampons may be removed and fresh ones introduced, or they may remain in for some few days. Should there be no tenderness or rise in

temperature the chloride of zinc packing need not be removed for four or five days; this is most easily extracted by means of Marion Sim's screw, which consists of a long straight steel rod with a very fine double screw, like a very small corkscrew, at the top. After the packing is removed the vagina and cavity should be well syringed out with some antiseptic solution. Weak iodine and water is efficient. A piece of iodoform should be packed into the cavity. This should be removed night and morning and the part syringed on each occasion. In syringing the vagina the writer employs a full-sized Ferguson speculum, as it is much easier to syringe out any sloughs or *débris* that may be detached.

At the end of from seven to ten days the slough created by the caustic will become detached, and can readily be removed by means of uterine forceps. The slough should always be allowed to become quite loose before being removed or troublesome hemorrhage may follow. A healthy, clean, granulating surface usually is left. In some cases it may be necessary to repack the cavity if the disease does not appear to be removed. Should portions of the surface appear roughened, with nodules present here and there, they should be removed by injecting a few drops of solution of chromic acid (1 drachm to 1 ounce) directly into the growth by means of a long hypodermic syringe. This has a very marked effect, causing the nodule to become hard, and this after another week or ten days detaches and can readily be removed.

With regard to medical treatment, he administers small doses of bromide of arsenic with good effect. Chian turpentine also appears in some cases to tend to cleanse the parts. He has had some tabloids prepared composed, some of Chian turpentine, chloride of gold and sulphur, others of turpentine, pyoktanin, and ichthyol. These tabloids have proved most successful in these cases.

Marked beneficial effects have followed the above methods of treatment in his hands. Some have been treated some months ago and are still free from any recurrence. The day after using the caustics the patients expressed themselves as suffering no pain whatever and also said their old pain had disappeared.—FRED. BOWREMAN JESSET, *Medical Press and Circular*, June 20, 1894.

#### TREATMENT OF ACNE.

The internal treatment must vary with the indications. For the external treatment the "don'ts" are as important as the indications for

positive treatment. In nearly all acnes hot water should be freely used. Perfumed and patent soaps should be condemned. White Castile soap and Pear's unscented soap are the most desirable. The tincture of green soap is excellent when there are comedones present, but is irritant if used too liberally. In pustular acnes, when there are no contraindications, sulphide of calcium, in pill form, best sugar- or gelatin-coated, is useful. Ichthyol, in 5- to 10-drop doses, answers the same purpose,—viz., tends to stop pustulation.

Where the eruption shows evidence of acute inflammation, sedative astringent applications must be made. Where the condition is of long standing, stimulant applications are indicated, with the object of opening the ducts and forcing the glandular action. In indurated acnes, with deep-seated pus lesions, surgical interference is necessary. The lesions should be opened and treated as small abscesses. Care must be exercised with the sulphur preparations to avoid chemical combinations with a possible metallic salt previously used.—DYER, *New Orleans Medical and Surgical Journal*, June, 1894.

#### REPORT ON THREE YEARS' USE OF NAPHTHOL.

The first noticeable effects of  $\beta$ -naphthol in typhoid fever are a more or less free and continuous diaphoresis, occurring very soon, and a gradual loss of the peculiar apathetic countenance; sleep becomes more natural and prolonged; and on the third or fourth day the character of the pulse changes, becoming slower and softer; this change seems invariably to happen before the fall in temperature takes place,—that is, on the day when the temperature ceases to rise. The offensive odor of the stools gets less each day, and the temperature begins to fall about the fourth or fifth day of the treatment, and becomes normal in three or four days after, without resulting in much loss of strength and without danger, for the writer has never noticed any toxic symptoms from  $\beta$ -naphthol.

There has happened on two occasions a return of the fever after the lapse of three weeks from the time when the temperature became normal, and the same treatment after three days' watching has had to be repeated. This he regards as possible evidence of the value of the treatment, assuming the second attack to be due to renewal of activity in the morbid agents, whose development had been suspended

by the antiseptic, these agents not having been removed from the bowel, in consequence of the obstinate constipation succeeding the first attack in both cases. He now prevents constipation and maintains the treatment for a week after temperature becomes normal.

There of course is nothing new in the use of naphthols or naphthalin in typhoid, but it is probable that the comparatively poor results hitherto recorded may be due to the defective method of administration, which has almost always been in the form of powder. Now, solid naphthol is irritant, and the powder particles are apt to increase the intumescence of the affected intestinal glands when they lodge on them, and so tend to undo what good may result from the antisepsis. The reason of this lies in the insolubility of  $\beta$ -naphthol in water; this may readily be overcome by first directing the  $\beta$ -naphthol to be dissolved by heat in olive or sweet almond oil (ten times its measure), and then the resulting solution to be emulsified with powdered gum acacia, preferably; this, sweetened and flavored, makes a palatable emulsion. Being somewhat pungent, it requires watering for children; all take it well. The author employs 4-grain doses every four hours for adults, in a mixture such as this:

R  $\beta$ -naphthol,  $\mathfrak{z}\text{i}$ ;  
Ol. olivæ opt.,  $\mathfrak{z}\text{x}$  (dissolve with heat);  
Pulv. gum acaciæ, q. s.;  
Ol. cassiæ,  $\mathfrak{m}\text{vi}$ ;  
Glycerini,  $\mathfrak{z}\text{i}$ ;  
Aque, ad  $\mathfrak{z}\text{viii}$ .

M. ft. emulsio, capiat  $\mathfrak{z}\text{ss}$  every four hours.

It seems that though a large portion of the  $\beta$ -naphthol passes down the alimentary canal unabsorbed and unchanged, rendering the entire tract less septic, some portion is absorbed, and acts as a diaphoretic and soporific.—E. H. EMBLEY, M.B., *Australasian Medical Journal*, May 20, 1894.

#### SOME OF THE USES AND ABUSES OF THE NITRITES.

The nitrites are a group of remedies which includes the nitrites of sodium, potassium, and nitro-glycerin, or glonoin, as it is now named in the new Pharmacopœia.

They are a somewhat important class of remedies, being prompt in action, but of short duration, and demanding their frequent administration to maintain continued effects.

In order to have an intelligent understanding of their therapeutic uses, it is necessary to know something of their physiological action; and while clinical experience may be the



touch-stone which solves the mystery of remedial agents, a good knowledge of pharmacodynamics will often restrain or prevent the employment of remedies whose administration would prove prejudicial to recovery. When taken they cause a sense of cerebral fulness, flushed face, pain in the head, rapid heart-beat, and lowered blood-pressure. The rapidity of heart-beat is caused by their depressant action on the inhibitory branches of the vagus, and to the sudden relaxation of the terminal arterioles in front from vaso-motor paralysis. The flushed face is caused by the dilatation of the capillaries, and the lowered blood-pressure to the lessened resistance in front. It may be accepted as a fact, to which there are but few exceptions, that when there is very little resistance in front,—that is, lowered blood-pressure,—the heart endeavors to make up or compensate the loss by increasing the number of its contractions, and when we employ an agent like the nitrites, which also paralyzes the inhibitory centre, the number of heart-beats is greatly increased.

On the nervous system their action is not so marked, but they take rank as sedatives or depressants, confined to the motor tract of the cord. In the blood they transform hæmoglobin to methæmoglobin, and thus lessen or destroy the oxygen-carrying function of the corpuscles. The blood becomes venous and of a chocolate color, with consequent lowering of the body temperature, due to decrease of oxidation and increased radiation of heat from the dilated capillaries.

The diseases in which the nitrites have been found beneficial are those of a spasmodic nature, whether local or general, such as whooping-cough, spasmodic cough, hystero-epilepsy, and convulsions of children. Hystero-epilepsy and simple hysteria he has found yield to a single dose of glonoin. In interstitial nephritis the nitrites, especially the glonoin in combination with digitalis, are useful. In this disease we have heightened blood-pressure, owing to spasm or constriction of the terminal arterioles, and an hypertrophied left ventricle, a condition of affairs which, if not cured, is relieved by the nitrites. Death from croupous pneumonia always comes from cardiac failure. When there is impending failure of the right heart from over-distention, the nitrites, by dilating the arterioles, thereby diminishing the work which the heart has to do and causing an equilibrium in the distribution of the blood, have been found of benefit, particularly if employed on the first appearance of the engorgement.

Migraine, when there is a spastic or constricted condition of the cerebral vessels, is sometimes relieved by their administration. Other conditions of acute cerebral anæmia are also rapidly relieved by them, such as syncope and anæmic epilepsy.

Many other similar conditions which will suggest themselves are greatly benefited by the use of the nitrites. Cardiac dyspnoea, attended by high arterial tension, will be greatly relieved by their employment. The pain due to aneurismal pressure is sometimes alleviated by them. Generally, if they will do good in a certain case, their action is prompt.

The contraindications are important.

We find the surface pale and cold in shock, the heart beating feebly and often the beat greatly increased in frequency, complete muscular relaxation, and depression of all the vital functions. The pale, cold surface is caused by the paralysis of the vaso-motor system and by the recession of the blood to the muscles and abdominal viscera. Now, why, in such a condition, should such paralyzing and depressing agents as the nitrites be given, except we believe in the law of similars? Is it prudent or good therapeutics in such a case to give a remedy whose chief action is to still further depress that weak heart, to still more paralyze the vaso-motor system with which the integrity of the circulation and blood-pressure is in such intimate connection and relation? The author firmly believes this procedure to be wrong.

During the past year two eminent men have died in this country, and the public press informed us that when they were in extremis, "nitro-glycerin, a powerful heart stimulant," was given to brace up the flagging heart and prolong their lives. Let us investigate this statement and see if we can elicit the distinguishing characteristics of heart stimulants. We find they cause (*a*) increase in the number of heart-beats, (*b*) rise in the blood-pressure, (*c*) increase of blood in the cerebral arteries. Do we find such to be the specific action of the nitrites on the circulatory system? No, except that the heart-beats are greatly increased in frequency, caused by paralysis of the inhibitory nerve, and the dilatation of the peripheral vessels from relaxation of their muscular coats through vaso-motor paralysis. Consequently there is a loss of resistance in front which immediately results in a great fall in blood-pressure, and the resultant action serves only to intensify the already existing state of cardiac insufficiency and adynamia.

If the physiological action of a remedy is to serve as a guide for its intelligent administra-

tion in disease, it is difficult to understand why the nitrites are given in cases of genuine intrinsic cardiac failure.

"A perfect circulation" is one which empties the veins and fills the arteries,—the very antithesis of the condition produced by the use of the nitrites. Its employment, therefore, in essential cardiac adynæmia is one fraught with great danger. In threatened heart-failure from alcoholism, and when it has actually taken place from chloroform or ether, he believes the administration of the nitrites to be prejudicial to recovery, as their dominant action is to weaken the pulse and lower the arterial tension.—JAMES NEWELL, M.D., *Canada Lancet*, July, 1894.

#### THE THERAPEUTICS AT THE INTERNATIONAL MEDICAL CONGRESS.

It may happen that the most successful and largest medical congresses are not particularly rich in therapeutic work. Yet, after all, when the heat and smoke of the day are cleared away, one feels that the important query is, Has anything been said or read which will make the treatment of diseases more sure and effective?

We have been looking over the records of the International Congress at Rome, and have tried to find what practical therapeutical suggestions were made at that time.

The results of our study, which has been facilitated by a critical review in the *Gazette des Hôpitaux*, have not been very fruitful, nor yet altogether barren. For example, DR. PETRESCO, of Bucharest, comes forward again with further facts regarding his treatment of pneumonia with large doses of digitalis. He has employed his method now for thirteen years and treated eleven hundred and ninety-two cases, and he has reduced the mortality to 1.22 and 2.66 per cent., while under other treatment the mortality ranges from 7.15 to 35.50 per cent.

A year ago we discussed Petresco's method, which consists of giving 8 or even 12 grammes of digital leaves in twenty-four hours. According to the author, it invariably jugulates acute lobar pneumonia in a few days.

DR. GOFFREDI, of Naples, calls attention to the value of lactose as a diuretic, particularly in heart-disease. It is not so effective in nephritis. Diarrhoea is sometimes caused by the lactose.

DR. PUCCI praises very highly the use of phenocoll in malaria. He gives from  $\frac{1}{2}$  to 1 gramme a day.

After having broken up the paroxysms, the drug is continued five or six days in association with quinine or arsenic. It is also very useful in malarial neuralgia.

A curious contribution to therapeutics is that of DR. SANCHEZ HERRERO, of Madrid, who recommends a solution of bromide of potassium, 50; iodide of potassium, 5; and water, 500, in the treatment of epilepsy. Dr. Herrero is evidently not familiar with some of the very ancient formulas for epilepsy, including that of Brown-Séquard. We should add that the doctor adds to his treatment hypnotic suggestion twice a week, and that he has cured nineteen cases out of thirty.

DR. A. MURRE, of Bologna, makes a protest against the abuse of cold water in the treatment of chlorosis, but at the same time thinks that cold water, properly used, is better than drugs in this condition.

DR. TISON thinks that the nitrate of aconitine is useful in facial erysipelas, shortening the attacks and lessening the pain. He gives  $\frac{1}{100}$  grain ten times a day.

VON ZIEMSEN, of Munich, would have us return to the use of transfusion of blood, particularly in grave anæmias.

The best method is the arm-to-arm one without defibrinating, but if this is not practicable, he recommends subcutaneous injection of non-defibrinated blood. This ought to be given under chloroform and followed by massage, as the process is very painful. It is safe to say that a treatment involving regular anæsthetization of the patient will hardly become popular, and certainly is not safe.—*Medical Record*, July 14, 1894.

#### THE MEDICAL TREATMENT OF ICTERUS DUE TO RETENTION.

In an article upon the above subject, DUJARDIN-BEAUMETZ (*Bull. Génér. de Thérapeutique*, June 15, 1894) believes that, previous to surgical interference in the treatment of icterus, diet is of the utmost importance, and this should consist preferably of raw white meats, green vegetables, and fruit. The moderate use of eggs is also of advantage. All alcoholic beverages should be avoided. For drinking purposes, alkaline waters, such as Vichy and Carlsbad, to which a little milk should be added, are to be preferred. Tea and coffee may be allowed, especially tea, which, in the cases under consideration, acts as a general stimulant, enhances digestion, increases the bodily energy, and excites the heart, all this tending to improve an impaired nutrition.

Vichy pastilles are recommended, each one of which contains five-twelfths of a grain of bicarbonate of sodium; forty pastilles represent, therefore, sixteen grains of the sodium salt. Being slowly dissolved, these pastilles act as a sialagogue, through which action a large quantity of saliva will accumulate in the stomach, the remedy producing in this way good therapeutic effects. In regard to other medicinal agents, the author advises the use of certain antiseptics, such as salicylate of sodium and asaprol, these to be preferred to other similar remedies. At each meal the patient should take an 8-grain cachet of salol and another 8-grain cachet of asaprol, or a tablespoonful of the following solution, accompanied with the salol cachet:

R Salicylate of sodium, 240 grains;  
Water, 8 ounces.

#### PUERPERAL ECLAMPSIA TREATED BY VENESECTION.

The following interesting case from a practical stand-point is reported by McLEOD in the *Australian Medical Gazette* for May 15, 1894.

Mrs. C., aged eighteen. When labor began she was eight months pregnant with her first child. Her friends thought she was having hysterical fits, and sent for the writer. She had three of these "fits" before his arrival. He found the patient in bed and only partially conscious. Pains were regular, and her pulse was over 100. She presently had a "fit" which settled the question of diagnosis.

On examination the os was found dilated to the size of a two-shilling piece; the head was presenting and the membranes unruptured. The bladder was emptied and 40 grains of bromide of potassium injected into the rectum.

During the next half-hour three convulsions occurred; thereupon the os was sufficiently dilated to apply the forceps, and a living male child was delivered in about fifteen minutes. The placenta came away entire. The uterus contracted firmly, and no post-partum hemorrhage whatever occurred. The convulsions continuing after the uterus was emptied, more bromide and chloral was injected into the rectum.

Returning three hours later, the author found six convulsions had occurred. The pulse was now 120 and the temperature 103°. Within the next three hours, and after a further dose of bromide and chloral per rectum, eight convulsions occurred. The patient was now quite comatose and the breathing was stertorous.

As a last resort he proposed bleeding, and

with difficulty got the consent of the parents. He allowed about sixteen ounces of blood to run from the vein in the right arm. No more convulsions occurred, the breathing became quieter, and when he visited her again—thirteen hours after delivery—the pulse had fallen to 85 and the temperature to 101°. Consciousness was returning, and she could recognize her friends. Her condition gradually improved, and when seen on the eighth day she was quite clear mentally, but inclined to be quiet. She made a perfect recovery.

Probably, had there been a profuse post-partum hemorrhage immediately after the emptying of the uterus, the convulsions might have ceased at that stage.

#### SOME PRESCRIPTIONS.

In a recent lecture on the art of prescribing medicines, DUJARDIN-BEAUMETZ (*Bull. Génér. de Thérapeutique*, May 30, 1894) treats of external medication, and publishes several combinations devised by himself and other practitioners, as follows:

*For an Eye-Wash.*—All former eye-washes made up of nitrate of silver, atropine, eserine, or sulphate of zinc have of late been substituted by antiseptics, chief among which is corrosive sublimate, according to this formula:

R Bichloride of mercury,  $\frac{1}{2}$  grain;  
Distilled rose-water, 5 ounces;  
Sydenham's laudanum,  $\frac{1}{2}$  drachm.

For an eye-salve:

R Red oxide of mercury, 15 grains;  
Crystallized acetate of lead, 15 grains;  
Powdered camphor,  $7\frac{1}{2}$  grains;  
Vaseline, 288 grains.

*Sternutatory Powders.*—GRELLETY has proposed the following in acute coryza:

1. R Betol, 40 grains;  
Menthol, 4 grains;  
Cocaine, 8 grains;  
Powdered coffee, 72 grains.

DIEULAFOY, according to Huchard, recommends this combination:

2. R Salicylate of bismuth, 240 grains;  
Camphor, 80 grains;  
Cocaine hydrochlorate,  $\frac{3}{4}$  grain.

JULIAN advises the use of this ointment:

3. R Menthol,  $3\frac{1}{2}$  grains;  
Boric acid, 80 grains;  
Vaseline, 800 grains.

**Tooth-Powders.**—The following formula is recommended by GALIPPE, and has, according to Dujardin-Beaumetz, given excellent results:

1. R Boric acid, 400 grains;  
Phenic acid, 16 grains;  
Thymol, 4 grains;  
Water, 1.7 pint.

To this may be added, with advantage:

Essence of peppermint, 20 drops;  
Tincture of aniseed, 2½ fluidrachms;  
Cochineal, sufficient quantity to color it.

MAGITOT has proposed this simple combination:

2. R Thymol, 8 grains;  
Borax, 16 grains;  
Distilled water, 15 ounces and 5 drachms.

An antiseptic tooth-powder, as recommended by LE GENDRE, is composed as follows:

3. R Finely-powdered boric acid, 40 grains;  
Chlorate of potassium, 32 grains;  
Powder of guaiac, 24 grains;  
Prepared chalk, 64 grains;  
Powdered carbonate of magnesium, 64 grains;  
Essence of rose or mint, 1 drop.

#### COCAINE IN MINOR SURGERY.

The following case may be of interest to those members of the profession situated in isolated country districts where a second medical man is not available for assisting at operations. It is also with the hope of inducing others with larger opportunities to give cocaine a further trial that this report is given.

P. W., a half-caste, who had for some weeks previously been operated upon for hydatids of the liver, presented himself with symptoms of a right-sided empyema. An exploratory puncture revealed the presence of fetid pus with traces of bile, and by means of a Dieulafoy's aspirator about four pints of extremely fetid purulent fluid were withdrawn. This afforded some temporary relief; but a few days after his condition was worse than ever, and an incision with proper drainage was urgently called for as offering the only chance of saving life. His very feeble pulse, as well as the universal prejudice at present against chloroform, forbade the use of this agent, and ether, apart from the fact that a person suitable as administrator was not available, was contraindicated by the existence of a chronic bronchitis. Under these circumstances the writer determined to use cocaine, and proceeded as follows:

He first applied some ether spray to the part

which was to receive the first puncture of the needle, and, having filled a hypodermic syringe with a one-per-cent. solution of cocaine, injected the skin lying in the future track of the knife with it, pushing the piston of the syringe slowly home as the point of the needle traversed the tissues. This injection was made in the meshes of the true skin, and the anæsthetized area measured about two and a half or three inches in length. On withdrawing the needle and waiting for four or five minutes, he was enabled to make a painless incision through the whole thickness of the skin; but on attempting to deepen the wound the patient became sensitive of the knife, which, therefore, was laid aside for the moment and a second injection of cocaine injected into the connective and muscular tissue at the bottom of the cut, having first stopped all oozing of blood (an important point) by the application of a warm sponge. In a few moments he was again enabled to proceed with the dissection in a painless manner, and after a third injection of a few more drops, the operation as at first planned was completed. But on account of a somewhat close approximation of the lower ribs, the opening obtained was not wide enough to carry a drainage-tube of proper size, and the operator decided to remove a piece of the lower rib. This was again done painlessly, after injecting some cocaine under the periosteum. The total quantity used amounted to a little over one grain.—ALTMANN, *Australian Medical Gazette*, May 15, 1894.

#### LEGUMINE AS A SUBSTITUTE FOR A MILK DIET.

BOVET (*Bull. Génér. de Thérapeutique*, May 30, 1894) relates four cases of gastric disorders in which a milk diet was not well borne, and where the administration of legumine gave satisfactory results. This remedy was prescribed in as high doses as 16 drachms a day, in the case of adults. To one patient it was given for three months, to the exclusion of all other articles of food, during which time the individual gained four pounds in bodily weight. According to the author and MARINES, who has made a special study of the subject, legumine is not only a medicament, but a food, owing to the phosphated and albuminoid elements which it contains.

#### HOME-MADE BEEF-POWDER AND HOW TO PREPARE IT.

DR. WILLIAM R. HUGGARD (Davos Platz, Switzerland) writes in the *British Medical Journal* of June 9, 1894: Some of the beef-

powders in the market smell and taste of the chemist's shop, and are not readily taken by an invalid whose palate requires to be coaxed. A happy idea struck the writer several months ago that beef-powder might without difficulty be prepared fresh and on a small scale by any ordinary cook. The experiment was made, and the result was satisfactory beyond expectation. Beef-powder made at home is appetizing, has a delicate aroma and flavor, and can be taken with pleasure by invalids who turn with aversion from ordinary food. If a little pepsin be taken at the same time, it is digested even when the ordinary peptonized foods are not retained. The mode of preparation is simple. Lean beef is cut into small pieces; these are put into boiling fat, dripping, or butter for a couple of minutes until the surface is browned. They are then removed from the fat and placed on a strainer for a few moments. Afterwards they are placed in a mincing-machine. The resulting mince is placed in a slow oven and dried. The drying process may take from five to twenty-four hours, or even longer, according to the heat employed. When thoroughly dried, the meat is quite crisp, and can be ground in a coffee-mill that has not been used for any other purpose. In the drying process the meat loses a trifle more than four-fifths of its weight. This beef-powder can be taken in various ways,—with hot water or soup, with mashed potatoes, with bread and butter in a sandwich, or with a little pepsin in a starch wafer. The writer has given this home-made beef-powder with such excellent effect in several cases where there was much difficulty with food that he thinks others may find it useful.

Beef-powder, carefully prepared according to the directions above given, has an agreeable flavor, and admits of being used like potted meat by persons of delicate or fanciful appetite. By regulating the heat applied in making the powder, the albuminous constituents need not be coagulated, but merely dried, and the digestibility of the powder would then be increased; in any case, the finely-divided condition would facilitate digestion. A very good beef-tea may be made from the powder by infusing it in moderately hot water. For the preservation of the powder it would be necessary to keep it from contact with atmospheric air and to avoid the access of mites or similar deteriorating influences.

#### THE TREATMENT OF MYELITIS.

In the issue of *La Tribune Médicale* for June 7, 1894, the following advice is given. In

acute myelitis, absolute rest in bed, the application of counter-irritation to the spine, and for the first eight days of benzonaphthol. After the eighth day two pills, made up according to the following prescription :

R Ergotin, gr. i;  
Capsicum, gr. ss;  
Powdered licorice, sufficient quantity.

In chronic myelitis, apply for a week or more active counter-irritation to the spine and a deserts- spoonful of the following mixture internally :

R Iodide of strontium,  
Iodide of potassium, of each, ʒiiss;  
Glycerin, ʒi;  
Syrup of orange, ʒiv.

After this has been given for from three weeks to a month, use the following pill :

R Nitrate of silver, gr. ¼;  
Powdered licorice, sufficient quantity.

Every morning cold douches should be applied to the body, composed of alcohol and water, and a constant current of electricity should be applied to the spine.

#### BROMOFORM IN THE TREATMENT OF WHOOPING-COUGH.

CARPENTER, in the *Polyclinic* of June 16, 1894, writes on bromoform. He says that bromoform is a colorless liquid produced by the action of bromine upon alcohol in the presence of an alkali. In practice, milk of lime is saturated with bromine, then alcohol is added and the mixture distilled. It is also prepared now by the action of sodium hypobromite upon acetone by a reaction analogous to that used in the manufacture of chloroform. Bromoform should be prescribed in colored bottles, as it is not a stable preparation, and if exposed to the air it volatilizes. When exposed to heat or light it is gradually decomposed, becoming a brownish-red, due to the free bromine which is liberated. Bromoform is slowly eliminated by the kidneys.

The good effect of the drug in whooping-cough is partly, at least, due to its acting as a local anæsthetic upon the pharyngo-laryngeal mucous membrane. Some writers have gone so far as to claim specific properties for the drug. It certainly does moderate the violence of the individual paroxysms, diminishing their severity and frequency, often stopping the vomiting in twenty-four hours, and in many cases it shortens the duration of the disease.

Bad effects have rarely been seen, and never

from small doses. Small doses in some cases have failed to be of service, while large ones have made the child stupid and sleepy. In a few cases, where the child had received a larger dose than had been prescribed, narcosis was produced, but the patient was readily revived. The symptoms of poisoning have been pallor, staggering, dilatation of the pupil, coma, heart-failure, and collapse.

Bromoform is given in 1- to 5-drop doses three or four times daily, a child of one year receiving 1 to 2 drops three times a day; a child from two to four years, 2 to 4 drops three or four times a day; a child from five to eight should receive 4 to 5 drops four times daily, according to the number and frequency of the attacks. Bromoform is difficult to drop. It is usually given dropped on sugar or in water; care must be taken that the pearly drops floating about in the water are swallowed.

When we cannot trust the attendant to drop the medicine, it may be given in the following manner:

℞ Bromoform, ℥xlviii;  
Alcohol, ℥iv;  
Tr. cardamomi comp., q. s. ad ℥i. M.  
Sig.—gi t. d. in water.

If the administration of the drug be discontinued too soon, relapses may occur.

#### THE ACTION OF CHLOROFORM ON THE CARDIAC RHYTHM.

It was shown by the Hyderabad Chloroform Commission that the rapid temporary fall of blood-pressure which often occurs when chloroform is suddenly administered is due to a reflex slowing or inhibition of the heart through the vagus nerves. J. G. MACWILLIAM (Prov. Royal Soc., vol. liii.) has worked out the way in which chloroform brings about this and other variations in the cardiac rhythm. He finds, in cats and rabbits, the same two stages in the effect of chloroform on the cardiac rhythm as is observed in man,—namely, a stage of acceleration followed by a stage of slowing. These two stages are still manifest after the accelerator nerves are divided. The acceleration, therefore, is not due to impulses reaching the heart by the accelerator nerves. After the vagus nerves are divided, with or without the division of the accelerators as well, the rapid heart-beat consequent on the removal of the restraining action of the vagi can still be slowed down by the action of chloroform, but this is not preceded by any further quickening. The stage of acceleration is, therefore, due to

the chloroform more or less paralyzing the inhibitory action of the vagi. That slowing is produced after the vagi are divided, although it is not so great as when they are intact, shows that the slowing is not entirely due to a stimulation, reflex or direct, of the cardio-inhibitory centre. It is further shown that the slowing is not due to the stimulation of the local inhibitory mechanism of the heart, for the administration of atropine, which paralyzes this mechanism, does not prevent the slowing being produced by chloroform. MacWilliam's researches, therefore, give additional proof of the direct action of chloroform on the heart. He concludes this part of his work with these words: "It appears that chloroform acts on the heart and distinctly slows its rate of beat through a depressing or retarding influence exerted on the intrinsic rhythmic mechanism of the organ." In the remaining part of the paper the relation of the rate of beat to the blood-pressure and the influence of the direct and reflex stimulation of the cardiac nerves is discussed. Reflex acceleration is not due to impulses reaching the heart by the accelerator nerves, for it may be readily obtained after they are divided, provided that the vagus nerves are intact. Muscular exertion causes acceleration of the heart, partly by diminishing the influence of the vagi. Animals with great running and staying powers have a slow pulse, usually markedly restrained by the cardio-inhibitory centre, and so capable of rapid acceleration by inhibition of that centre. This is strikingly seen when the effects of the division of the vagi in the rabbit and the hare are compared. In the rabbit, removal of the vagus influence produces but little change in the rate of beat, while in the hare the pulse may rise from 64 to 264, showing the marked action of the cardio-inhibitory centre, and consequent power of rapid acceleration of the heart in the latter.—*British Medical Journal*, June 2, 1894.

#### THE TREATMENT OF INFANTILE PALSY.

During the febrile period we are to combat the fever by using 2 to 4 teaspoonfuls of the following mixture:

℞ Hydrochlorate of quinine, gr. viii;  
Syrup, ℥i;  
Peppermint water, ℥i.

Wrap the lower extremities of the child in moderately strong mustard-plasters.

In the paralytic variety we should apply every day a feeble continuous current of four to five milliampères along the vertebral column,

and this should be allowed to pass for ten or twenty minutes. The small doses of iodides may be given internally. Morning and night frictions and massage should be applied to the paralyzed muscles with saline douches, both hot and cold. Passive gymnastic exercises should be carried out, and care should be taken that by means of this exercise deformities are avoided. As the treatment progresses it is well to administer the lacto-phosphates.—*La Tribune Médicale*, June 17, 1894.

#### BONE-MARROW IN THE TREATMENT OF PERNICIOUS ANÆMIA.

FRASER, of Edinburgh, writes on this subject in the *British Medical Journal* of June 2, 1894, and, although this communication deals with only one case of pernicious anæmia treated with bone-marrow, the reputation of the writer and the curative effect seems sufficiently evident to justify its publication, especially as an opportunity occurred for testing in it the value of the chief remedies hitherto used in the treatment of this disease.

The patient—A. R., a gardener, sixty years of age—entered the Royal Infirmary on September 30, 1893. His symptoms were frequent vomiting and diarrhoea, oedema of the feet and ankles, moderate and irregular pyrexia, dimness of vision, retinal hemorrhages, anorexia, dyspnoea, and, latterly, complete prostration. The illness had existed for about four months.

Although the author was desirous to treat this patient at once with bone-marrow, the condition was so serious a one that, in the absence of experience regarding the therapeutic value of bone-marrow, he considered it advisable to administer, in the first instance, some of the remedies usually employed in pernicious anæmia. Only after they had failed in producing benefit was bone-marrow given.

For the sake of brevity the history of the patient is divided into eight periods, which correspond with the treatment adopted in each period.

First period, two weeks ; no medicinal treatment. During this period the hæmocytes of the blood varied from 1,860,000 to 1,460,000 per cubic millimetre, and the hæmoglobin from twenty-eight to thirty per cent., the specific gravity being 1038. There was great distortion in the shape and variation in the size of the hæmocytes, which did not form rouleaux. Retinal hemorrhages were present in both eyes.

Second period, two and a half weeks ; ferrous chloride, 6 to 12 grains daily. The hæmocytes and hæmoglobin steadily fell to 900,000

per cubic millimetre and twenty per cent. respectively, and the specific gravity to 1036.

Third period, eight days ; arsenic (15 to 30 minims of liquor arsenicalis daily) was given, in addition to 12 grains of ferrous chloride, daily. Still further deterioration occurred in the hæmocytes and hæmoglobin, the former falling to only 843,000, and the latter to eighteen per cent., but the specific gravity remained at 1036.

Fourth period, three weeks ; arsenic and iron were continued in the above doses, but ox-bone-marrow was now also given by the mouth, uncooked and in the quantity of 3 ounces, daily.

An almost immediate improvement occurred, so that at the end of this period the hæmocytes numbered 1,800,000, the hæmoglobin amounted to thirty-five per cent., and the specific gravity was 1042. The patient now began to recover strength ; he could remain out of bed for several hours each day, and the appetite was greatly improved.

Fifth period, twenty-six days ; ox-bone-marrow, arsenic, and salol (15 to 30 grains daily). The improvement was continued. The hæmocytes rose to 2,470,000, the hæmoglobin to fifty-five per cent., and the specific gravity to 1047. The patient felt much stronger, and his complexion was distinctly pink and had almost entirely lost its originally yellow hue. He had also gained in weight.

Sixth period, thirty-two days ; ox- and calf-bone-marrow and salol (30 grains daily).

The improvement was still further continued, so that the hæmocytes reached an absolute maximum of 4,130,000, though they afterwards fell to 3,400,000 ; the hæmoglobin rose with the hæmocytes to seventy-five per cent. and also fell to seventy per cent., and the specific gravity became 1058. The blood had now a healthy appearance. It could flow readily from a small puncture, it formed fairly good rouleaux, and the red cells were more uniform in size and fewer of them were distorted.

The patient was now able to do light work in the ward without fatigue ; the alimentary system was perfectly healthy ; oedema, pains, headache, pyrexia, and the venous bruits in the neck had disappeared, and the skin had a healthy appearance.

Seventh period, one month ; ox- and calf-bone-marrow and ferrous chloride (6 to 12 grains daily). The hæmocytes remained, with some oscillations, at about 3,400,000 ; the hæmoglobin averaged from seventy to seventy-five per cent., on one occasion reaching eighty per cent., and the specific gravity remained steadily at 1059.

The patient felt strong and enjoyed assisting in ward work, such as carrying coal up a long flight of stairs. He remained out of bed all day, there were no subjective symptoms even on considerable exertion, and "hæmic" venous and cardiac bruits were no longer audible. Ophthalmoscopic examination of the eyes showed that all traces of retinal hemorrhage had disappeared.

Eighth period, not concluded when this paper was communicated to the Congress; ox-bone-marrow, iron, and salol. The improvement was maintained, so that the hæmocytes reached 4,000,000, the hæmoglobin eighty-five per cent., and the specific gravity 1060. The patient was now practically in a normal condition. His appetite was good and his appearance that of a healthy man.

An examination of the graphic representation of the progress of the case shows that no benefit was obtained—that, indeed, deterioration occurred—during the prolonged administration of iron and arsenic in both medium and large doses, but that the remarkable improvement which occurred was produced only after the administration of bone-marrow had been commenced, while it continued to be produced during periods in which neither arsenic nor iron were being administered.

The demonstration of a curative influence by bone-marrow may appear to be somewhat obscured by the introduction of salol into the treatment, and a further examination of the therapeutic value of this substance in pernicious anæmia appears, indeed, to be suggested. The introduction of salol was due to the urgency of the case requiring that no description of treatment should be neglected in whose favor any theoretical or experimental evidence had been advanced. Since, however, this communication had been made to the International Medical Congress, the patient was treated with only bone-marrow for a period of twenty-seven days (period ten), and the improvement was well maintained to the end of this period.

He was discharged from the hospital because of his urgent wish to return to work as a gardener, for which he declared himself more able than he had been for the last five or six years; and, to use his own expression, he felt "as if he had been made over again." On the day when he left the hospital (May 19, 1894) the hæmocytes numbered 3,900,000 per cubic millimetre, the hæmoglobin was seventy-eight per cent., and the specific gravity 1058; the hæmocytes were nearly uniform in size, only a few of them showed slight "tailing" and no megalocytes were present; there was no excess of

leucocytes or of blood-plates, and good rouleaux were formed on the microscopic slide.

It may be worthy of note that before medicinal treatment had been commenced, and in the earlier periods of treatment when the patient was receiving large doses of iron and arsenic, the blood-plates were conspicuously deficient in number; while soon after the administration of bone-marrow had been commenced a great increase occurred in their number, which was followed by a reduction to a moderate number during the later periods when the blood had been restored to a nearly normal condition.

The frequent failure of therapeutic measures in pernicious anæmia confers an interest upon any remedy which appears capable of controlling this malignant disease, even although the evidence is derived from one case only, and notwithstanding the circumstance that temporary improvement occasionally, though very rarely, appears to occur spontaneously. The facts now stated appear to justify the hope that bone-marrow will be found to have a remedial value in some, at least, of the cases of pernicious anæmia.

#### *TINCTURA FERRI CHLORIDI IN TYPHOID FEVER.*

In the *International Medical Magazine* for June 1, 1894, is an article on this subject by McNUTT.

Many and various are the remedies that have been and are being used in the treatment of typhoid fever. It is not the intention of this abstract to discuss the hygienic and antipyretic treatment of this affection. The tincture of iron is useful for the gastro-intestinal condition, for its surface intestinal antipyretic action. It might be well to say, however, that antipyretics are used much too freely in typhoid, and greatly to the detriment of the patient. Too many practitioners are governed in the treatment by the thermometer. Better not use the thermometer at all in typhoid than to be steadily and surely beating the life out of the patient in vain efforts to break down the fever.

Typhoid fever is not a frequent disease in San Francisco, and consequently the number of cases that the physician is called upon to treat is not large; still, scarcely a year passes but every physician in San Francisco who has a large family practice meets with a few cases. In the course of twenty-five years the writer had an opportunity of trying all the so-called gastro-intestinal remedies, such as turpentine,



bismuth, salicylic and mineral acids, nitrate of silver, iodoform, copper, zinc, etc. For the past four years he has been in the habit of administering tinctura ferri chloridi in glycerin and water in nearly all these cases of typhoid fever, 10 to 30 drops every two to four hours.

McNutt's practice has been to commence the administration of iron as soon as positive indications of typhoid are recognized. The result of his experience is, that the tincture of iron is the most reliable of all gastro-intestinal remedies and much more efficient than the muriatic acid without the iron. It certainly exerts a beneficial influence on the mucous membrane by its astringent and tonic properties, limiting the hyperæmia, and consequently the exudations and tendency to ulceration and to hemorrhage. Besides the beneficial influences of tincture of iron on the mucous membrane of the digestive tract, it certainly has a sustaining influence, by acting as a blood food, in preventing waste of tissue, when there is very considerable diarrhoea or dry brown tongue, which is not often the case when the iron is given freely.

$\frac{1}{10}$  to  $\frac{1}{100}$  grain of bichloride of mercury to each dose is frequently useful, when the gastric symptoms are prominent, or liquor acidi arseniosi, 1 or 2 drops, sometimes adding both with benefit.

#### THE PREPARATION OF THE FINGERS AND NAILS FOR SURGICAL OPERATIONS.

ALLIS (*Maryland Medical Journal*, July 21, 1894) thus discusses the finger-nails from the stand-point of the operative surgeon:

The nails form no mean part of a surgeon's outfit. As a covering to the end of the finger they give confidence; in the threading of needles they are often indispensable; while often, when working among adhesions, they may serve a good turn. If the nails are too long, they are in the way, and if too short, a privation. A medium length of nail is an exceedingly valuable helper at times. With some the length of nail is governed by the ability to keep it clean; hence the nail is kept very short, much to the disadvantage of prehension, in which man excels.

The surgical care of the nails has had its full share of attention. The nail-brush forms a part of every physician's and surgeon's outfit. It is cheap, compact, and moderately thorough. Its disadvantages are, that if stiff, it is apt to scratch the hand or cut beneath the nails; if soft, it is of little value. To supplement the defects of the brush, some persist in using the point of the nail-blade of their pocket-knives. The

writer says persist in using, as much has been written against the practice. Not only is there danger of cutting the flesh beneath the nail, but it leaves the under surface of the nail rough, making it a ready collector of filth, and less easily cleaned for a subsequent operation.

To avoid the knife he uses a little wedge-shaped piece of soft pine. This, when wet, frays up, makes a kind of mop, is a good carrier of soap, and enables the user to wash out under the nail. The objection to this device is that the pine rapidly frays out, becomes bulky, and requires frequent trimming. Therefore the author employs a rubber eraser. A variety is made for artists and school-children that is wedge-shaped. This is ready for use as it is found at the stationer's, though if made a little sharper it is softer and more like a mop. It is pliable, soft, and an excellent carrier of soap. For the hand, generally the old-fashioned wash-rag cannot be improved upon. It is a good carrier of soap, and with it each finger in turn can be tightly caught and wrung until clean. With the nail- or hand-brush only the back and front of the fingers get the scrubbing.

In addition to the implements usually deemed important for the cleanliness of the under surface of the nails, a very valuable one is the nail itself. Noticing that a young lady's finger's whom he frequently met were always exceedingly neat, the writer made bold to ask her methods, and learned that she had nothing more modern than a pair of scissors to trim her nails, and that with wash-rag and the tips of her finger-nails she kept her hands in most perfect order. One thing that may be said of the finger-nail as a nail-cleansing instrument is, that it will not scratch the under surface of the nail, a very important factor in the process, whether one aims at beauty or cleanliness.

#### PERSONAL EXPERIENCE IN THE TREATMENT OF STRANGULATED HERNIA.

ASHHURST (*Kansas City Medical Index*, July, 1894) states that he has operated on twenty-one cases of hernia, nineteen of which were strangulated. He has reduced by taxis a number equal to that operated on. He holds that the comparatively small number of cases which he has to report shows that strangulated hernia is a rare affection in Philadelphia. Fourteen of the operations were for strangulated inguinal hernia; one case disappeared; of the remaining thirteen, ten recovered. Of the four strangulated femoral hernias, three recovered. The single strangulated umbilical hernia died. None

of the deaths were directly traceable to operation. In regard to the limitations of taxis, Ashhurst holds that this means of reduction should be the first, though in the hands of the inexperienced practitioner it is an unsafe procedure. Under such circumstances he believes the patient will sometimes be safer with the operation of herniotomy than with taxis. When taxis is employed, the neck of the sac is grasped by the thumb and fingers of one hand, while the other hand, spread out, exercises a combination of pushing and squeezing; and then by a kind of alternating movement, slightly relaxing one hand, while with the other the pressure is increased, if the hernia is reducible at all, it will go up. If no gurgling is heard in a few minutes, it is not likely that taxis will succeed.

As for aids in taxis, the hernia may be drawn down a little before beginning the upward pushing movements. In the Pennsylvania Hospital the practice is to put the patient in bed, apply ice over the hernia, and give a moderate quantity of opium. When the resident physician is not able to reduce the hernia by gentle taxis, this course is followed until the surgeon has been summoned. If slight manipulation on the part of the surgeon fails, ether is administered and taxis again employed in the ordinary manner, usually with success. If the hernia cannot be reduced, operation is resorted to, an understanding being had to this effect before etherization. When herniotomy is performed, Ashhurst follows the rule that where it is justifiable to resort to taxis, it is proper to endeavor to reduce the hernia without opening the sac. Frequently, the constriction being in the neck of the sac, it requires opening. In making the deep incision the tip of the left forefinger should be pressed against the source of constriction and the hernia-knife passed flatwise; this is then turned in the proper direction and the deep incision made with a gentle sawing motion, assisted by pressure of the finger below. In inguinal hernia the incision should be directly upward. In femoral hernia the deep incision should be made upward and inward, the hernia-knife being blunted by rubbing it on the handle of another knife. After operation the patient is put on the use of opium and belladonna for a few days, in gradually diminishing dose. Usually the bowels move spontaneously in five or six days.

was removed for cancer, with but one fatal result. The great majority of the operations were not complicated by removal of the lymphatic glands or ligature of the lingual artery. Nineteen of the patients were above sixty years of age, and some were suffering from organic disease of internal organs. All the operations were performed by Whitehead's method,—that is, a ligature is passed through the end of the tongue; this is drawn forward and loosened from before backward by small snips with a pair of long scissors. When the disease is situated wholly at the base of the tongue the lingual arteries are tied. Iodoform applied to the mouth by means of an applicator is best calculated to keep the wound in an aseptic condition. Wound secretions are prevented from gravitating into the air-vessels by keeping the patient's head low and letting him lie well over from the side from which the tongue has been removed. The feeding of these patients needs great attention. When not more than two-thirds of the organ has been removed, liquids can generally be taken on the day following the operation from a feeder with a spout, provided a piece of india-rubber tubing three or four inches long be fixed on the spout. If the right half of the tongue has been removed, the patient should lie over on the left side during feeding, so that the food is kept as far as possible from the wound, and passes over the parts which have been least interfered with.

When the whole of the tongue has been removed, the difficulty of swallowing is much greater, and many days may elapse before the patient acquires the knack of swallowing liquids without permitting a small quantity to pass down the air-tubes. During the first forty-eight hours these patients are fed through the rectum with nutrient enemata. At the end of that period the patient is allowed to make a first attempt to swallow a little liquid, and water is chosen for the experiment, because the entrance of a little water into the trachea is seldom followed by any serious consequences. Milk and beef-tea are more dangerous; they hang about the air-tubes, are difficult to get rid of, and are very prone to undergo rapid decomposition and occasion the much-dreaded swallowing pneumonia. If the experiment is successful, other liquids may be tried, and the problem of feeding is really overcome; but if there is any difficulty, the patient is fed as long as may be necessary through a tube. Butlin believes no instrument is so good for this purpose as a black bulbous catheter, about No. 9 or 10, attached to a long piece of india-rubber

#### REMOVAL OF THE TONGUE FOR CANCER.

BUTLIN (*International Journal of Surgery*, July, 1894) reports a series of forty-six consecutive cases in which at least half the tongue

tubing, to the other end of which a small glass funnel is fixed.

The throat is first sprayed with a three- or four-per-cent. solution of cocaine; the tubing is clamped with forceps just above the attachment of the catheter, and the funnel and tubing are filled down to the clamp forceps with warm food. The catheter is very gently passed down the pharynx, and hitches at the posterior border of the larynx. The patient is directed to swallow, and as he does so the catheter is easily passed on into the cesophagus. For the moment discomfort is created, and the patient often struggles. He is directed to close his mouth, and no attempt is made to pass the catheter farther down for half a minute or longer. Then it is slowly and gently passed down to a distance of about eleven inches from the teeth. When the annoyance of the presence of the catheter has ceased, the clamp is removed and the food is allowed to run slowly down into the stomach. If there is an inclination to regurgitation or to cough, the descent of liquid is instantly arrested by pressing on the tubing with the finger and thumb, and the nurse lowers the funnel until the dangerous moment has passed. By attention to these details a pint or a pint and a half of liquid may easily be introduced into the stomach without danger. Before removing the catheter the funnel is raised high up, so as to get rid of the contents of the tube, and during the actual removal of the catheter the tubing is kept tightly pressed between the finger and thumb in order to prevent the entrance of even a few drops into the larynx. When the feeding is carefully carried out according to these directions, Butlin has patients so satisfied with it that they have sometimes insisted on being fed through a tube for a much longer period than the writer deems necessary.

#### THE EARLY TREATMENT OF GONORRHEA.

After treating gonorrhoea for many years with silver solutions, DR. VON SEHLEN (*Monatshefte für Praktische Dermatologie*, June, 1894) formulates his experience in the following way: The duration of treatment depends upon the length of time of infection before handling the case; therefore the applications must be made as early as possible. In favorable cases, when the infection is not longer than four days, the case should be cured in one day.

In case of infection lasting eight days before treatment, three to six days are necessary for a

cure; infection of eight to fourteen days requires twenty days and upward.

The early treatment retards the progress of the disease along the urethra and lessens the course of the trouble, even when the gonococcus persists.

Despite the disappearance of the cocci, recurrence is not impossible, and careful watchfulness on the part of the patient is necessary while the gonococcus, through the silver applications, loses its growing energy.

In fresh cases, up to the third or fourth day after the infection, strong solutions (from one-fourth to one per cent.) of silver nitrate can be injected by means of the usual small syringe; the meatus being tightly held and the urethra being rubbed backward and forward, the solution reaches all the urethral mucous membrane. This is repeated until the mucous membranes are seen to be coated white with the silver precipitate, while the fossa receives a special application of a two-per-cent. solution, and is coated with euophen powder, which proves a good protector.

In cases of longer standing than four days, he applies, by means of the two-way catheter, feeble solutions (from .1 to 1 pro mille) in distilled water, warmed to the body temperature. The urethra soon becomes accustomed to stronger solutions, and after a few days the solution may be increased from one-fourth to one per cent, which can then be applied by means of the syringe.

#### TRIKRESOL AS AN ANTISEPTIC.

This antiseptic is a clear, colorless liquid three times as powerful as carbolic acid. It is cheap, makes a clear solution, does not corrode instruments, and neither makes the hands of the operator slippery like lysol nor numb like carbolic-acid solutions.—*International Journal of Surgery*, vol. vii., No. 3.

#### TREATMENT OF CEREBRAL HEMORRHAGE.

*Apoplexy*.—1. Loosen all tight linen; lay the patient down, with head a trifle elevated. Wrap the patient's arms and legs with sinapisms. Place a bag of ice under the patient's head. Vigorously rub the body with camphorated alcohol.

2. Administer the following purgative:

℞ Sodii sulphatis, ʒv;  
Sennæ (folliculis), ʒiiss;  
Aque bouillant., ℥ʒiiss.  
Make an infusion and strain.

3. If the pulse is not too feeble, give as soon as possible a hypodermic of a solution of ergotin (Dusort) containing fifteen grains.

4. If there is too much excitement, give two tablespoonfuls of,—

R Potassii bromidi,  
Strontii bromidi,  
Sodii bromidi, of each,  $\mathfrak{z}$ i, gr. xv;  
Glycerini,  $\mathfrak{f}\mathfrak{z}$ iss;  
Syrupus aurantii corticis,  $\mathfrak{f}\mathfrak{z}$ viss.

5. If the heart and pulse grow feeble, give from 1 to 5 hypodermics of sulphuric ether in the twenty-four hours.

6. Continue this treatment throughout the attack,—sometimes lasting several days,—and support the patient with milk and beef-tea, taken in small amounts.

*Period of Paralysis.*—1. Watch carefully the patient's mode of living; allow him to eat little at evening; food mostly vegetables, milk, eggs, soups, little meat; no alcohol or tobacco; no intellectual fatigue. Each morning sponge-bath of alcohol and water, followed by frictions with flannel. Watch carefully all pressure-points for bed-sores; order a water-bed, and dust the spots with a powder of cinchona and starch.

2. Maintain a loose condition of the bowels, and give the following pill every eight days:

R Aloes, gr. iiss;  
Rhubarb, gr. ivss.  
M. et div. in pil. No. 20.

3. Take during twenty days of the month a tablespoonful of the following solution in a glass of milk:

R Strontii iodidi,  $\mathfrak{z}$ iiss;  
Sodii arsenitis, gr. iss;  
Aque destillatæ,  $\mathfrak{f}\mathfrak{z}$ ixss.

4. Do not practise electro-therapy during the first months of the paralysis, but maintain massage regularly afterwards; commence with a feeble continuous current daily for twenty minutes.

*Prophylaxis.*—1. Those predisposed are counselled to rest in bed, without sleeping, after meals.

2. Upon rising sponge lightly with alcohol and water, with dry frictions afterwards and a short walk without fatigue.

3. Avoid sudden changes of temperature; intellectual fatigue or violent emotions.

4. Substantial but light food, white meats, fish, eggs, vegetables, fruits, but little dark meats; no alcohols; no shell-fish; don't rest too long at the table in a heated room, and take a walk after each meal.

5. Maintain regularity of the bowels, if necessary by means of salts.

6. During fifteen days per month take in a cup of milk a spoonful of the following:

R Potassii iodidi,  
Potassii bromidi, of each,  $\mathfrak{z}$ i;  
Aque destillatæ,  $\mathfrak{f}\mathfrak{z}$ ixss.

—*La Tribune Médicale*, June 21, 1894.

#### TREATMENT OF LEG ULCERS.

DIVER (*Medical Press and Circular*, quoted by the *Universal Medical Journal*, July, 1894) treats leg ulcers by means of chlorine gas. This is generated by pouring two drachms of potassium chlorate and one drachm of hydrochloric acid into a jar, the outside of which is covered with brown paper. After this a disk of white paper is introduced, and on top of the paper sufficient absorbent wool. A large cork is then fitted to the neck of the jar. The wool—yellowish-green on the surface when first exposed to view—is placed over the ulcer and quickly covered by gutta-percha tissue, kept in place by the ordinary bandages. The author reports rapid healing of chronic ulcers by this method.

#### RETAINED TESTIS.

KEETLEY (*Lancet*, quoted by the *Universal Medical Journal*, July, 1894) thus operates for retained testicles. After thoroughly freeing the gland from its fibrous attachments to the inguinal canal, it is brought down, and two skin wounds being cut in the scrotum and neighboring parts of the thigh respectively, these wounds, and some of the fibrous tissue always found attached to the testis or epididymis are sutured together, the sutures piercing the tunica vaginalis. The author has just operated upon two cases. In one the testicle distinctly grew after it was brought into its normal position.

#### CYSTICO-LITHECTOMY.

After seventy-seven operations upon the gall-bladder, in twenty-six of which he found impacted stones in the ductus cysticus, HANS KEHR (*Berliner Klinische Wochenschrift*, June 4 and 11, 1894) proposes incision of the cystic duct in all cases of impaction.

Formerly he performed the ordinary cystotomy, leaving a biliary fistula. After the lapse of a few months, when only mucus was escaping, he sounded this fistula, discovered a stone obstructing the backward flow of bile,

performed a second laparotomy, incised the duct, removed the stone, passed a drainage-tube through the duct,—now patulous,—and sewed the incision.

This plan he found open to the objection necessarily raised against a second laparotomy; also the sounding of the duct is not in all cases satisfactory nor safe. As a result of his varied experiences he has adopted the following plan:

Through a four-inch incision in the right rectus muscle he inserts his right hand, breaking gently all adhesions until the cystic duct is reached. He then searches for and finds the stone, and then endeavors to force it back into the gall-bladder, pursuing the method of Lauenstein. Standing on the patient's right side, the operator turns his back to the patient's face; then bending forward, he inserts the left hand into the abdominal opening and endeavors to force the stone from its impacted position. This seemingly clumsy position is, as a matter of fact, of the greatest value in this manipulation. This manoeuvre, however, failing, the gall-bladder is aspirated of as much of its contents as possible by puncture at the fundus, flat sponges are inserted to catch any remaining bile, the bladder is incised, the wound edges being held up by forceps, and the cavity of the bladder is cleaned by repeated packing with gauze.

The right hand now grasps the stone, the left index finger is passed into the bladder (a sound or forceps may also be tried), and by the combined manipulation an endeavor is made to move the stone in a backward direction. This plan failing, the bladder is sewn to the wound, and further proceedings arrested until swelling of the mucous membranes forces the stone into view; sometimes even then the finger or spoon or forceps are required for its removal.

If, however, he finds the stone very large or strongly embedded, he proceeds at once to the incision of the ductus cysticus over the point of impaction. The bile and stone are at once removed, drainage inserted, and the incision sewed together with fine silk and a curved needle. To facilitate this, he passes two loops of silk through the edges of the wound, and then, by further holding apart of the abdominal wound, lifting of the overlapping lobe of the liver, and tension on the two silk loops, the suture of the duct is much facilitated. He especially avoids sewing the mucous surface or including too much of the serous coat. The bladder is packed as before, and after the expiration of some time, both tube and packing being removed, and finding the duct patulous, he closes the external fistula.

#### TREATMENT OF COLLES FRACTURE.

DOYLE (*International Journal of Surgery*, July, 1894) advocates an ingenious, simple, and easily-constructed splint for the treatment of Colles fracture. Two or three thicknesses of cloth or flannel may be cut to the proper shape. These are then dipped in plaster-of-Paris cream and secured by a roller to the normal arm with the hand flexed slightly. After the plaster has set, it is removed and allowed to thoroughly dry. The fractured arm, which has been in the mean time reduced and dressed, is placed in this anatomically-made splint, which readily retains the bones in their normal position by the aid of a roller bandage, smoothly but not tightly applied, no posterior splint being required.

#### TECHNIQUE OF MAJOR AMPUTATIONS.

CREDE (*Medical Press and Circular*, quoted by the *Universal Medical Journal*, July, 1894) attaches little importance to the Esmarch bandage, avoiding a number of ligatures by doing without it. The form of the flap is also a secondary matter. The important point is to cut a flap lined with a thick muscular layer, as the muscles have a tendency to undergo ultimate retraction. He uses neither drainage nor suture, the edges of the flap being approximated by a gauze bandage applied directly to the stump in such a way as to make slight compression. In twenty-two cases thus operated on, all did well, two-thirds healing by first intention. In the other one-third, small areas of suppuration prevented rapid recovery, but in no case was there separation of the wound, as occurs frequently when the flap consists of skin only.

Gussenbauer is also in favor of abandoning drainage, but holds that only by sutures can exact approximation of tissues be obtained.

#### DR. HERON WATSON'S METHOD OF EXCISING THE WRIST-JOINT.

By this method the knife is entered about one and a half inches above the styloid process of the ulna, towards the palmar aspect, and carried down to the metatarsal bone of the little finger and a short distance along it. An incision of about three inches in length is thus made down to the bone. The lower end of the ulna is then cleared and fully an inch of it removed. The carpus is then exposed and removed piece by piece, the trapezium only being left. The heads of the metatarsal bones can then be dealt with by gouge or saw, being turned out of the wound if necessary. Next

the end of the radius is turned out, which can be quite easily done, and sawn off. Last of all the trapezium is examined, and removed if necessary. Each step in the operation is very easy and very satisfactory. After removal of the necessary amount of diseased bone, very few vessels require to be ligated. Sometimes one at the radial side of the wound is rather difficult to secure; but as the wound can be turned almost inside out by shoving the thumb in like the finger of a glove, no great difficulty should really be experienced.

MILLER (*Edinburgh Medical Journal*, August, 1894) advises as an after-dressing packing with iodoform gauze, which should be diminished in amount with each dressing. The hand and forearm should, of course, be kept at rest on a splint. Passive movement should be commenced not later than a week after the operation. The joints that are most likely to be stiff are the metacarpo-phalangeal, but these are generally very rigid before the operation is performed. They should be freely flexed and extended, as a preliminary step to the operation. During the last six years the author has excised the wrist by Dr. Watson's method ten times. In one case subsequent amputation was necessary; in one case amputation was advised, but not submitted to; in three more cases disease returned, necessitating scraping; while in the remaining half of the cases the disease did not return, and a useful hand was obtained. In the three cases that were scraped—one of them twice—a fairly useful hand resulted. An interesting fact in these recorded cases is that eight out of ten cases presented the right hand, which seems to point to trauma as the exciting cause.

The advantages of this method are that only one incision is necessary. Drainage is very efficient, the wound being on the side of the hand which is the lower in the position in which the hand is usually carried. The resulting cicatrix is hardly visible, and therefore the appearance of the hand is fairly natural after recovery. The operation is very easy of performance.

#### TREATMENT OF CANCER WITH METHYL-BLUE.

VON MOSETIG MOORHOF exhibited a patient suffering from villous cancer of the gall-bladder, treated with pyoktanin internally and locally. He introduced into the examination wound every two days a pencil of methyl-blue, and gave nine and a quarter grains in pills. The treatment resulted in complete cure.

#### VESICAL PAPILLOMA OF UNUSUAL DURATION.

WEIR records an interesting case of this order occurring in a man of fifty-two. Bleeding had persisted off and on for a period of thirty-seven years. The diagnosis was most satisfactorily made by the employment of Guyon's method,—*i.e.*, the urination of the patient into three glasses, in the last of which the most and freshest blood was found. After washing out the bladder a bimanual examination was made, the catheter being left *in situ*, by which manoeuvre fresh blood was pressed out in small quantities through the catheter, or else was washed out of the catheter after it was withdrawn. Cystoscopic examination failed to reveal the existence of the growth. The papilloma, about one inch and a half in length and a quarter of an inch in diameter, and quite fibrous in character, with fringe on its free ends, was situated just above and to the right side of the meatus internus urinarius. The tumor was detected in a very ready manner after the suprapubic section had been made, by the insertion of a large Ferguson's glass vaginal speculum. This idea has been suggested by Fenwick, of London, who used such a speculum as a sort of caisson, even with the bladder more or less filled with water or urine, in which case the speculum was to be passed to the deeper part of the bladder, the imprisoned water soaked or wiped out, and the bladder thus exposed carefully inspected. Weir, however, found it better to wipe out the bladder as well as possible, then introduce the speculum, and sweep it along the walls of the viscus. Through this same speculum the recorder seized the tumor with a forceps and with a curved scissors cut it off, and then with a Paquelin cautery lightly touched its bleeding surface, and finally packed upon the still bleeding wound a wad of iodoform gauze, which was held firmly in position until all hemorrhage ceased.

This operation commands a ready view of the whole of the bladder in its lower and posterior parts, which parts are most affected by growths. It enables one to readily recognize the mouths of the ureter, and to pass into them, if necessary, instruments for their further exploration.

The bladder in this instance, after removal of the tumor, was sewed snugly together and the abdominal wound left open. The patient made a prompt recovery, with a very trifling leakage for eight days, and has remained well. The tumor was a papilloma with a heavy fibrous stroma.

*INTERNAL URETHROTOMY FOR STRICTURE.*

SCHUMPERT (*Medical Record*, August 11, 1894) discusses the treatment of stricture of the urethra as follows:

It is a popular idea with the majority of the profession (prejudiced by results antedating antisepsis) that the cutting operation should be the last resort; that it should be used when all else has failed. The author gives a record of thirty-nine urethrotomies performed by himself, thirty-five of which were internal, including four impassable; the remaining four were external urethrotomies. The latter were among the first operations on the urethra in his experience; they were two with and two without a guide. He has since become so impressed in favor of the internal operation that he has never returned to the external. His experience with strictures proves that palliative treatment is vain, notwithstanding the patient has been taught to use the bougie himself once or twice a month. The patients neglect this measure. He finds that internal urethrotomy gives the best results and is justifiable in any case occupying the pendulous urethra. His method of operating requires a set of sounds, a bistoury, grooved director, and a set of bulbous bougies or urethrometer; this latter instrument is not essential, though it may often be used very conveniently in locating strictures and testing their extent. Schumpert uses a bistoury which has a perfectly straight shank seven inches long, with a blade extending from its point half an inch back, and presenting not exceeding one-fourth of an inch beyond the front surface of the shank; the back of the blade is exactly on a straight line with the back of the shaft, even to its point. His grooved director is seven inches long and fork-shaped, with the handle of the fork representing the groove of the director and the prongs the handle; it is made of sufficient strength to admit of considerable pressure without bending; the strength of the director, however, must not lie in its back, but sides only, as the back must be thin in order to allow the back of the knife to approach as nearly as possible the roof of the urethra, thus enabling the operator to incise the stricture through its entire diameter. The patient having been placed in the usual position and a stricture diagnosed, if it be meatal, surgeons all agree that it should be cut with a bistoury, and in this locality a director is not indicated; but if it be lower, this latter instrument becomes imperative. With the grooved director and bistoury described all pendulous strictures have fallen in the field of internal urethrotomy and

are easily accessible. The penis is held at right angles to the body with the left hand of an assistant, while with his right he holds the director firmly against the urethral roof, with the groove of the director presenting towards the patient's feet, the penis in the mean while being kept somewhat extended. If the stricture be passable, the operator passes the blade of the bistoury down the director until in the locality of the stricture, this point being marked by the thumb and second finger of his left hand, which press gently the sides of the corpora cavernosa; the index finger is held against the spongy body, directing the blade of the knife, which may be plainly felt as it cuts through the stricture, first in front, then on either side. If the stricture be impassable, the director is introduced until its blunt end comes in contact with the face of the stricture, the penis being held as before if the coarctation is in the upper pendulous portion; but if it is lower, possibly in the anterior membranous urethra, after the director and knife have been introduced beyond the suspensory ligament, the penis is tilted forward to an angle of about forty-five degrees, the director pressed firmly in the direction of the symphysis pubis and downward until in contact with the stricture; the knife is now pressed well back against the director, then downward until the resisting stricture yields; three incisions are then made as before described. The main points to bear in mind are, to have a reliable assistant, who will hold the penis and director perfectly steady and exactly as directed by the operator, who must himself see to it that the end of the director is in contact with the face of the stricture, that it is in perfect line with the penis, and must be very careful to pass his knife exactly in that line. After-treatment consists in first washing out the urethra with hydrogen peroxide, then injecting copiously with boracic-acid solution; this is done seven or eight times a day, until all discharge ceases. A large sound is introduced once in four or five days for the first month, once a week the second month, once in two weeks the third, and during the next two months twice or three times ought to suffice.

*THE OPERATIVE TREATMENT OF RUPTURED URETHRA.*

DEANESLY (*Practitioner*, July, 1894) completes a paper with the above title with the following statements:

In all cases where rupture of the urethra has been caused by direct violence, it should be the rule of surgery to perform primary urethror-

raphy. Cases not treated in this way almost always result in stricture. This form of stricture is so intractable to all forms of dilatation and division that during the last few years many surgeons have bodily excised the strictured portion and restored the continuity of the canal by suture. Undoubtedly this treatment has much to commend it. The stricture is usually a single one of very limited length and in most cases easily accessible. There is no difficulty in detaching the urethra from the corpora cavernosa sufficiently to allow the approximation of the divided ends. Lastly, the results obtained prove that a urethra of perfectly normal calibre, with no tendency to contract, can be obtained in this way and in no other.

Cases of ruptured urethra complicating fracture of the pelvis are very rarely capable of being dealt with by primary urethrorrhaphy. Indeed, it is not common for these cases to live beyond a few days. As a rule, nothing can be done in the first instance beyond providing against extravasation by perineal section. A secondary urethrorrhaphy might perhaps be possible in some cases after recovery from the fracture.

In conclusion, certain objections should be mentioned which are urged against the performance of urethrorrhaphy. It may be said that it is sometimes impossible to find the proximal end of the urethra, owing to its depth. In cases of rupture by direct violence, the rupture is always in front of the triangular ligament, and in a recent case of this kind no surgeon with a competent and practical knowledge of anatomy could fail to find both ends of the urethra. In cases of fractured pelvis or in secondary cases with tight stricture, perhaps complicated with sinuses and fistulæ, the difficulty may be great, but should not be insuperable. By prolonging the incision backward through a portion or all of the sphincter ani, and by detaching the anterior wall of the rectum, it is quite easy to expose the prostate, or even the base of the bladder. At this point it would always be possible to expose the urethra behind the stricture, and if necessary to open it and pass a sound forward.

Hemorrhage from the injured urethra, especially from the bulb, when this is injured, is generally free enough to somewhat embarrass the operation, but need not be alarming, as it is readily arrested by suturing the urethral wound. Extravasation of urine has often taken place before the case has reached the surgeon's hands. Recorded cases, however, prove that this is no bar to the success of primary urethrorrhaphy, even when twenty-four hours or

more have elapsed between the accident and the operation.

Lastly, the risk of producing a permanent fistula is extremely small. In the absence of stricture or some form of obstruction, it is by no means easy to produce a permanent urethral fistula, so great is its tendency to close. Certainly the insignificant risk of fistula is quite outweighed by the very grave risk of stricture when ruptured urethra is treated by ordinary methods.

#### INCONTINENCE OF URINE AND FÆCES CURED BY CIRCUMCISION.

ROSENBERY (*Medical Record*, August 11, 1894) reports the case of a child he was called to see with incontinence of urine and fæces. The child seemed to be as healthy as the average four-year-old. In making an examination the reporter discovered an elongated prepuce. The following day the child was anaesthetized and circumcision performed. At the time of the operation a digital examination revealed a patulous anus, with no sign of a sphincter muscle. When complete healing had taken place, the bowel-trouble entirely subsided, but there was still incontinence of urine. Finally, the physician advised atropine tablets, pushed till dryness of the throat was pronounced. The child fully recovered.

#### PRESCRIPTIONS.

For obstinate thrush in children :

R Zinci chloridi, gr. ii;  
Aque, ℥vi;  
Solve.  
To be applied locally.

For alopecia areata :

R Aceti cantharidis, ℥i;  
Unguenti hydrargyri oxidi rubri, ℥i;  
Misce et fiat unguentum.  
To be applied to the affected parts twice daily.

A pigment for warts :

R Acidi salicylici, gr. xv;  
Acidi lactic, m̄xv;  
Collodii flexilis, ad ℥ii.  
Misce et fiat pigmentum.  
To be applied morning and evening.

A cooling lotion for pruritus :

R Liquoris ammonii acetatis, ℥ii;  
Acidi hydrocyanici diluti, ℥i;  
Spiritus rectificati, ℥iii;  
Aque rosæ, ad ℥viii.  
To be applied locally.



*ICHTHYOL IN GYNÆCOLOGY.*

STORER (*Boston Medical and Surgical Journal*, August 2, 1894) concludes an article on this subject as follows:

While ichthyol is by no means the gynæcological panacea that some observers have claimed it to be, still, it has sufficiently approved value to deserve a very high place in our list of remedies.

While its chief action is to relieve pain, it does possess certain resorbent qualities which in some cases are relatively powerful.

Its use is unattended with danger or discomfort.

The use of the pure drug is generally more satisfactory and reliable than that of solutions.

It has not yet been proved that it has any gynæcological value other than as a local application.

*PRESCRIPTIONS.*

For neuralgia:

R Quinine valerianatis, gr. x;  
Tinct. sumbuli, ℥i;  
Extracti taraxaci, liq., ℥vi;  
Infus. cascariillæ, ad ℥ii. M.  
A dessertspoonful three times a day.

For croup:

R Tinct. ferri perchloridi, ℥i;  
Potassii chloratis, ℥i;  
Glycerini, ℥i;  
Aq. cinnamononi, ad ℥iv. M.

A teaspoonful every two hours to a child four years old.

For diarrhœa in infants:

R Acidi carbolici, gr. ii;  
Bismuthi subnitratiss, ℥i;  
Syr. acaciæ, ℥ss;  
Aq. menthæ pip., ad ℥ii. M.

A half-teaspoonful every two to four hours (for a child one to two years of age).

For tympanitis:

R Ol. terebinthinæ, ℥i;  
Ol. amygdalæ dulc., ℥ss;  
Tinct. opii, ℥ii;  
Mucil. acaciæ, ℥v;  
Aq. lauro-cerasi, ℥ss. M.

A teaspoonful every three to six hours.

—*Medical Press and Circular*, July 18, 1894.

*WHITE SWELLING OF THE KNEE.*

SCUDDER (*Boston Medical and Surgical Journal*, vol. cxxxi., No. 5) formulates treatment as below:

The treatment of this disease, which has

such a progressive, important set of symptoms, depends largely upon the period in the disease at which treatment is instituted.

The indications for treatment are local and general.

The general indication is to improve the nutrition of the patient by means of properly supplied fresh air, a nourishing diet, and the relief of conflicting disorders.

The local indications are to provide conditions favorable to the process of repair at the site of the disease, to prevent or to correct deformity, and to restore, so far as possible, the functions of the joint.

The local treatment may be classified into the non-operative or expectant; the operative,—erosion, excision, amputation.

There is an impression which seems to obtain in many quarters that, even with continuous rest, a tubercular joint never recovers, and that operative treatment itself, short of amputation, is of doubtful utility. It may be taken as an ascertained fact that the great majority of tubercular joints will recover if properly treated, with complete rest to the joint, and under good conditions of hygiene, sea-air, and nourishing diet.

If, after the palliative and mechanical treatment which secures absolute rest to the functions of the joint,—and this means not only rest from motion, but rest from every trauma,—if, after this careful mechanical treatment, some permanent abatement of symptoms does not occur, as well as evident diminution in the girth of the joint, as shown by accurate periodical measurement, operative interference is called for.

The length of time required in a trial of this palliative treatment should be decided by the condition of the case itself, but at least three months would seem to be sufficient for a fair trial. It is extremely important not to delay too long, for the operative procedures will be sorely handicapped if attempted late in the course of the disease.

Erosion of the knee-joint is the first important operative procedure to be instituted if the protective treatment fails. By the erosion of the knee-joint is understood the removal of diseased synovial membrane and ligaments, and, if necessary, also, to a very slight extent, of bone and cartilage.

The advantages of the operation are: there is no shortening; there is no deformity, other than the cicatrix; there is no arrest of the growth of the limb; free movement of the joint has resulted, although this is not always desirable. The causes of failure of this

operation are: incomplete removal of the disease; failure in maintaining asepsis; inability of the patient to repair the wound left by the operation. Prolonged care is required to prevent flexion of the knee. The leg must be immobilized for some time,—two or three years, or longer, if necessary. In properly selected cases it is safe to class erosion as an efficient surgical procedure.

If the knee is flexed, and has remained so for years, it is corrected by forcible correction of the deformity of flexion. The operation is performed by means of an apparatus purposely devised so that, without increasing the intra-articular pressure, the deformity may be corrected. Seven cases are reported, with good results in all.

Those cases should be excised which the expectant treatment, properly carried out, has failed to benefit, and in which erosion is contraindicated because of the extensiveness of the disease in the hard parts.

Amputation is necessary for those cases in which there exists disease too extensive for excision, and in which the general health is so poor as to demand immediate relief from the tremendous drain of prolonged suppuration.

There are several questions of importance to be considered in connection with the operation of excision of the knee-joint: the necessity of internal fixation; the method of operating; the external appliance to be used; the length of time for maintaining immobility. From a careful review of the experience of many operators, it seems that the accurate approximation of the tibia and femur secured by metallic sutures offers the best internal fixation,—better than that obtained by pins and other means.

The transverse incision through the ligamentum patellæ is most satisfactory, as it affords a more thorough exposure of all the joint surfaces than any of the other incisions suggested.

After the operation a rigid external support is necessary. For a long time—at least a year or more—the unprotected leg should not be allowed to receive the weight of the body. Immediately after the operation a proper protection is provided only where both the hip- and ankle-joints are immobilized. This is best accomplished by a plaster-of-Paris roller bandage extending from the tips of the toes upward and around the body at the hips.

The preservation of the patella is urged and discouraged by equally good authorities. The leg is stiff after operation; there is little use for the quadriceps, and its attachment to the patella, even if preserved, could be of little use. The bones are firmly united together. The pa-

tella, therefore, cannot help in retaining the bones in place. If there is any disease in the patella, complete removal of the bone is desirable, so that no portion of the disease may be left behind.

White swelling of the knee-joint is insidious in its onset, slow in its progress, and, if untreated, is sure in its ultimate results; its clinical course is varied. The indications for its treatment are constantly changing.

In many cases of white swelling of the knee-joint there comes a time when just as careful judgment is needed to determine whether mechanical means alone shall be depended upon, or whether operative interference is needed to insure the best results, as is required of the surgeon in the care of cases of appendicitis, where he is called upon to decide for or against operation. The immediate danger from an error of judgment is less in the former than in the latter cases, but the nicety of the judgment demanded is equally great.

The writer concludes his paper with the detailed history of thirteen cases on which he operated with uniformly beneficial results.

#### *IMPERMEABILITY OF THE EPITHELIUM OF THE HEALTHY BLADDER TO MEDICAMENTS AND POISONS.*

According to the correspondent of the *Medical Press*, July 18, 1894, at the last meeting of the Académie des Sciences, MM. BOYER and L. GUINARD made a communication on this subject. They undertook to demonstrate that the opinion of physiologists on this subject is perfectly justified, that the epithelium of the bladder possesses no absorbent power whatever when perfectly intact. The histological formation of the epithelium in question does not favor penetration, and one has only to think of the physiological rôle played by the bladder to be convinced of the error which those commit who believe in its absorbent power. A large number of authorities have put forth views similar to those of the author's, and these latter would not have reverted to the subject had not an opinion diametrically opposite been expressed by a distinguished surgeon (M. Bazy) before the Académie in November, 1893. The authors have demonstrated the truth of their opinion by experiment. Employing first the procedure of Cazeneuve and Lepine, they ligatured ureters and urethra in several dogs and injected into the bladder by means of a fine canula chlorhydrate of strychnine. In these conditions the animals tolerated during seven to nine hours, without the

least sign of poisoning, .02, .03, and .04 gramme of poison.

Wishing to operate under still more physiological conditions, they injected active solutions into the bladders of big dogs, *via* the urethra, by means of a catheter. Many animals being kept perfectly quiet, retained poisonous solutions for periods varying from eight to twenty-one hours. Metallic poisons, irritating substances, and those which give off fumes were not tried. Alkaloids alone were used, it being considered that among these agents there exist elements so poisonous and diffusible that when introduced in strong doses into the bladder they would surely produce rapid death if absorption really took place. Under the preceding conditions twenty-three experiments were made, and in all these not the least trace of any local or general physiological disturbance was noticeable, nor any indication of absorption of the alkaloids. Of these, pilocarpine, atropine and eserine, cocaine, morphine, veratrine, arsenate and chlorhydrate of strychnine in toxic doses were injected.

On every possible occasion the presence of the poisons in the voided urine after the experiments was ascertained, and a control experiment was also performed.

The urine from three dogs which had retained in their bladders .10 gramme of arsenate of strychnine was collected. After concentration this urine was injected hypodermically in two instances into the dogs which furnished it, and in the third instance into several frogs, two guinea-pigs, and a rabbit. All these died with classical signs of strychnine-poisoning.

The authors believe that the mucous membrane of the bladder, when inflamed, permits absorption, and they found death to follow injection of the poisons named when inflammation existed.

#### TREATMENT OF LATERAL CURVATURE OF THE SPINE.

MCKENZIE (*Medical Press and Circular*, July 18, 1894) gives an interesting *résumé* of this subject, with some valuable therapeutic suggestions.

The causation of this deformity is a subject of the utmost importance, because, were this fully known and did it receive due attention, much could be done to prevent what is a very common, distressing, and intractable affection.

1. Difference in length of the lower extremities. Recently authorities have been inclined to lay but little stress upon this asymmetry as a cause, but in the observation of the writer it is

a very common cause. A considerable number of the cases observed had suffered from infantile paralysis, which had left one lower extremity shorter and weaker than its fellow. As a consequence, the pelvis on that side drooped constantly when standing or walking. In this manner the plane of the base of the sacrum was inclined to the affected side, and a lateral curve of the lumbar vertebræ to the same side resulted. This is almost invariably accompanied by a compensatory curve to the opposite side; higher up in the spine. Sometimes a third curvature is observed, compensatory to the second. Often the extremities are found of unequal length when no definite cause can be assigned for this condition. Whatever the cause of the inequality in the length of the extremities, it is reasonable to consider it as strongly predisposing to lateral curvature.

2. There may be an obliquity of the plane of the base of the sacrum when there is no difference in the length of the extremities.

3. An attitude of curvature at first assumed voluntarily may become habitual. A school-girl may carry her books under her arm; may habitually take a wrong position at her desk, or in other ways take an attitude that inclines to one or the other side. This soon becomes habitual; the girl is more "at home" in the false attitude than she would be when erect, and the muscles, ligaments, and even bones of the side of the concavity soon adapt themselves to the new position and become shortened. In this manner an element of permanency is introduced in a case that, at first, was a wrong attitude voluntarily assumed.

4. Constitutional conditions, such as rickets, may act directly in causing unequal development, or may simply cause a weak spine, which readily departs from the vertical because of the pressure of the superimposed weight.

5. The great prevalence of lumbar curves to the left and of dorsal to the right goes to show that the greater use of the right hand and arm is a causative factor.

6. Unequal development of the two sides of the body from obscure causes may be assumed to affect the spine as well as the extremities, and thus become a direct factor in producing curvature.

A very important element in the deformity and the one most difficult to treat is the rotation or twist which occurs in the spine. The signs of curvature most noticeable and most readily appreciable by the inexperienced are inequality of the shoulders, of the angles of the scapulæ, of the hips, and of the ileo-costal spaces, and a departure of the row of spinous

processes from the vertical; but the deviation of the bodies of the vertebræ to the right or left always antedates the curvature, as seen on the surface and indicated by the spinous processes. Their deflection is also much more in degree than that of the spines. This increased distance of the bodies from the centre line causes a rotation about the vertical axis, and the head of the ribs and the first part of the shafts are thrown backward on the side of the convexity, while on the side of the concavity there is a corresponding flattening. In order that the ribs may meet at the sternum, there is a consequent sharp bending in front of the ribs that are flattened behind and a flattening in front of those which are more sharply curved behind. This gives us the marked inequality in the oblique diameters of the chest. This deformity is more common in girls than in boys, and most frequent between the ages of five and fifteen. The tendency is to become worse unless means are adopted to check its advance. Treatment of the constitutional conditions is, of course, of importance. The use of braces, splints, and jackets is to be discountenanced because of many objections. In cases of slight deformity it is difficult or impossible to apply any instrument that will grasp the deformity and hold it in a position of rectification. If it succeeds in doing so, it can only be by an amount of pressure which produces atrophy in parts already weak, and the more so because the pressure must be unintermitting. It more or less interferes with the functions of respiration and circulation, thereby retarding the general development, a matter of the greatest moment in these cases. Further, the patient learns to lean upon the support instead of on her own muscles.

A certain proportion of cases can be satisfactorily treated by gymnastics alone. If the case be one arising from habit, and if, when instructed, the patient can assume the erect position, or can produce considerable improvement by her own efforts, then much good may confidently be looked for from systematic gymnastic treatment.

The hearty co-operation of the patient is essential to successful treatment. All work done should centre about the one idea of assuming and maintaining the most erect and symmetrical position possible. When she has learned how to assume an improved attitude, little good will result, unless her confidence has been gained to such an extent as to insure her continued effort to maintain her bettered position.

The drill given should be daily, if possible,

and continued for several months. Several drilling together may be made to stimulate each other to greater efforts, and the improvement effected by certain movements in any one of the number may be witnessed by the others, and becomes a source of encouragement under circumstances where the daily drill is liable to become irksome and monotonous.

Much may be accomplished in the re-education of the senses of the patient, and much to encourage by having the improvement that is possible by personal effort shown while standing in front of a large mirror. If practice is taken in her own room and alone, in the interval between the regular drills, it should be done in this way, so that faulty positions may be avoided. At all times, whether in class or not, no exercises should be permitted until the ideal attitude for each patient has been assumed. The results to be looked for are not dependent so much upon the individual exercises performed as upon the manner of their performance. Whatever the particular movements which are prescribed, if they be executed while standing, sitting, or lying in faulty positions, these wrong attitudes are but confirmed. From time to time the patient should be carefully examined and assisted in assuming the best possible position, and afterwards this ideal attitude should be insisted on. The surgeon must have sufficient resource, sufficient knowledge of the work of the different groups of muscles, must have enough tact to originate and select such exercises as will accomplish most for each individual patient. It is also necessary that he should be able to execute all the movements gracefully himself.

Gymnastics alone will fail in exerting much corrective powers over a large proportion of cases. Since the pressure-correction exerted by braces has been so generally condemned, methods have been employed for exerting great corrective pressure for short periods of time. The author permits the patient to suspend himself by having a strap comfortably adjusted so as to grasp the occiput and lower jaw, having this connected by a cross-bar with a rope passing over a pulley and reaching to the hands of the patient. While he thus suspends himself some distance from the floor, a girth is passed around the body and connected with another rope passing over a pulley and controlled by the surgeon. This girth is so adjusted as to make pressure in the oblique diameter of the thorax in the direction that is found to be most effective in lessening not only the lateral curvature, but also the rotation. At the same time the circumstances are favorable for

using pressure with the hands of the surgeon in such a manner as to untwist the distorted spine.

This may be done for a period of ten minutes every day, or several times a day, with the result of producing much greater suppleness of the trunk. This powerful stretching of the tissues in the concavity of the curve, moreover, becomes a very effectual means of giving massage to the deep-lying structures of that side, and, though weeks or even months may be required to obtain the utmost results possible, yet in a very short time it will be seen that the patient can voluntarily keep the spine in a more extended position.

When there is disparity in the length of the lower limbs, or from any cause an obliquity of the plane of the base of the sacrum, a "lift" should be applied, so as to bring the pelvis to the horizontal.

The maintenance of a perfect correction may be looked for in only a small percentage of cases, but much improvement may be effected in all. For this developmental method of treatment, as compared with the treatment by braces, it is claimed that,—

1. It is more effective in correcting deformity.
2. It results in very marked improvement in the chest development and in general health.
3. It greatly improves the tone, size, and power of all the trunk muscles.
4. It re-educates the sense of erectness, so that the patient can appreciate the difference between an erect attitude and a distorted one.
5. It gives the patient confidence, and puts into her possession the means by which she may not only retain the degree of improvement effected, but may continue for years afterwards to make still more improvement.

#### EXCISION OF THE WRIST-JOINT BY A NEW METHOD.

MYNTER (*International Journal of Surgery*, August, 1894) details the following method, which he has adopted with very satisfactory results:

Professor Studsgaard, of Copenhagen, advocated a complete splitting of the foot from before backward, in order to gain free access to the diseased focus in the anterior tarsal and posterior metatarsal bones. Incidentally he recommended a similar splitting of the hand for tubercular osteitis of the carpus, making a longitudinal incision between the third and fourth metacarpal bones, and thereafter open-

ing up the joints between the os magnum and unciform bones and between the semilunar and cuneiform bones. Both superficial and deep palmar arches are, of course, severed, and must be ligated in the wound. Mynter follows this procedure, with the exception that he splits between the second and third metacarpal bones, and then enters between the trapezoid and os magnum and between the scaphoid and semilunar bones, as by this incision the hand is more evenly divided in two. He made the dorsal incision reach up to the radius, but found it unnecessary on the volar side to extend the incision farther up than to the base of the thenar eminence. The annular volar ligament was, therefore, not severed. By careful dissection from the dorsal side and forcible separation he found it easy to avoid injuring the dorsal tendons and the large volar tendinous bursa.

The whole carpus could now be widely opened, and it was extremely easy with scissors to extirpate the two halves of the carpus, and with a fine saw to remove the surfaces of the radius ulna and the metacarpal bones. The wound was thereafter sutured, but in order to produce strong and healthy granulations, which secondarily might contract and form fibrous tissue, he packed the large cavity with iodoform gauze, let out through the upper part of the wound on the volar side. The patient got up on the second day and the wound healed by first intention. The gauze packing was removed once a week for seven weeks, and when then omitted the wound healed promptly.

#### GASTROPLICATION.

Under this name, DR. JOSEPH BRAND (*Oest-Ungar. Centralbl. f. d. Medicin. Wissensch.*, No. 14) has recently described a new operative procedure for the treatment of gastric dilatation. Although devised as long ago as 1889, it was not until February of this year that he had an opportunity of putting it into practical execution. Gastric dilatation is usually due to some form of stenosis at the pyloric orifice, either resulting from new growths, cicatricial tissues, or adhesions, and the aim of surgical procedures has been the removal of the cause of the obstruction. Much has been accomplished in this direction by the exsection of the cicatricial tissue or by resection of the pylorus, and the surgeon can point with pride to the successful results obtained in many of these cases by operative means. There are some cases of gastrectasia, however, in which,

after all medical treatment has been exhausted and laparotomy has been resorted to, none of the above lesions can be discovered, and the operator is obliged to close the abdomen without having made an effort to relieve the dilatation. It is for this class of patients that Dr. Brand recommends his operation, which has for its object the diminution of the size of the stomach by the formation of a fold and suture of its peritoneal and muscular layers. This procedure has been successfully performed in the case of a female patient suffering from extreme dilatation of the stomach, according to the following technique: The abdomen was opened by an incision eight centimetres in length and parallel with the border of the ribs on the left side. The stomach was then sought for, everted by slow traction, and the pyloric region carefully examined. No tumor, cicatricial deposit, or adhesions could be discovered at this place, but a distinct flexion had resulted in consequence of the sagging down of the greater curvature. The anterior stomach-wall was then folded inward and sutured in a transverse direction, and to the right and left of the transverse fold a longitudinal fold was formed in like manner. The same proceeding was carried out on the posterior gastric wall, which was rendered accessible by making several slits through the great omentum, through which the organ was drawn. It was found easy to lift the muscular and peritoneal layers from the mucous membrane, which could be felt as a thick seam. Over two hundred sutures of catgut and silk were inserted, and the stomach was then returned to the abdominal cavity. Aside from the wounding of an arterial twig of the arcus vasculosis during the insertion of sutures in the posterior gastric wall, no accidents were encountered during the operation, which was followed by a most rapid recovery.—*International Journal of Surgery*, August, 1894.

#### COMPOUND FRACTURE OF THE ANKLE-JOINT.

BALCH (*Boston Medical and Surgical Journal*, August 30, 1894) reports five cases of compound fracture of the ankle-joint treated in the Massachusetts General Hospital. They are of interest from the fact that very good results were obtained in cases which seemed to offer little hope of a useful foot when first seen in the accident-room. In one case there was a compound fracture of both ankles and a simple fracture of the thigh; in another, a compound fracture of the ankle and a compound fracture of the other thigh; in another, a compound fracture

of one ankle; and in the last, a simple fracture, becoming compound later from sloughing of the skin over a prominent portion of a dislocated astragalus.

We may draw the following conclusions from this series:

1. That, at any rate in the case of poor patients, it is worth while to try to save the leg, even when the ankle is so severely injured that the chances of a movable joint appear very small. To a poor man the appearance of the ankle and the slight lameness caused by some loss of motion in the joint are of little importance in comparison with the expense and trouble of an artificial leg.

2. That a very good way of treating these fractures is on a posterior wire splint. This splint allows us to easily adjust the fragments from time to time, as the swelling goes down, while the foot is held firmly in the right position.

3. That the best dressing is the dry dressing of sterilized gauze, with iodoform gauze for drainage, when necessary. In certain cases a wet antiseptic dressing will hasten the separation of sloughs; but, as a rule, the dry dressing is to be preferred.

#### RATIONAL TREATMENT OF APPENDICITIS.

ASHTON (*Denver Medical Times*, August, 1894) holds that it is impossible, with our present means and methods of diagnosis, to know the nature of the pathological changes taking place during the course of an attack of appendicitis.

That all forms of appendicitis are dangerous to life, as it has been demonstrated that germs pass through the walls of the appendix without the presence of either ulceration or perforation.

That surgical interference is indicated in primary and secondary attacks of appendicitis, so soon as the diagnosis is clear.

That surgical interference is not advised during an acute attack of appendicitis, except when grave symptoms intervene, unless a competent surgeon is at hand. Under these circumstances the case should be operated upon after the so-called recovery.

#### TREATMENT OF CHANCRE WITH PEROXIDE OF HYDROGEN SPRAY.

This treatment, according to WORSTER (*Denver Medical Times*, August, 1894), not only relieves the anxiety of the patient and places him

in a delightful buoyancy of mind, but cures the chancre in the shortest possible time, without pain or detention from business, and with less scar and less destruction of tissue than any other method. He then details three cases of the large Hunterian variety, embracing the worst forms of sloughing and phagedena.

The pressure of the spray (sixty pounds), which is one of the most important factors in the whole method, not only cleanses and produces thorough asepsis, killing the germs of the disease at the very bottom of the ulcer, but the oxygen of the peroxide aerates the blood through the capillaries and arrests the progress of the disease at the nearest possible point, allowing the process of repair to commence as soon as possible, with the least loss and destruction of tissue and consequent scar. It must be particularly understood that in using this treatment all instruments, spray-tubes, and bottles must be made of either glass or hard rubber, for the reason that metals, with one or two exceptions, coming in contact with the peroxide will destroy its component parts and render it useless. The first effect of a spray of peroxide upon the ulcer is to deposit upon it a thick film of albumin; this should be allowed to remain for about half a minute or less; then the spraying is continued until a large tubeful has been used (one ounce). As the sore progresses the spraying causes a good flow of rich arterial blood upon it, which merely shows returning healthy conditions.

The treatment is entirely painless, and the patients do not experience any annoyance or inconvenience whatever.

No internal medication during this stage is given. The iodol powder is used only as an antiseptic, to protect the sore from external influence until it is sprayed again the next day.

#### ATONY OF THE INTESTINE.

FRIEDENWALD (*Medical News*, August 11, 1894), after a careful *résumé* of this subject, advises the following measures:

The treatment of intestinal atony depends upon its cause. If the condition is secondary, the treatment must be directed to the primary disorder.

Chronic constipation is the symptom that occasions most annoyance, and special attention must be directed to it. In all uncomplicated cases of atony of the colon the condition can be successfully relieved by simple measures. The hygienic and dietetic treatment is highly important. Inasmuch as sedentary habits predispose to this disorder, exercise is of some value

in many cases. This should consist in walking, as well as in gymnastics in which movements of the trunk play a prominent part.

Such foods are ordered as stimulate intestinal peristalsis. In this class are included substances that furnish a large quantity of undigested residue, such as fruits, vegetables, salads, Graham and rye breads. When there is no special contraindication (such as gastric atony), large quantities of cold water taken before breakfast may be serviceable.

There are certain natural mineral waters which are sometimes of great value in the treatment of intestinal atony unaccompanied by atony of the stomach; the Glauber salt waters belong to this class. The waters of Marienbad are considered of great value in this class of cases, especially in the obese; but the saline waters—Kissingen Rokoczy—are sometimes preferable. However, as many cases of intestinal atony are accompanied by atony of the stomach, the use of large quantities of water in these cases should be very restricted.

Persons suffering with intestinal atony should avoid the use of food that tends to constipate. In this class may be especially mentioned red wines, tea, and rice.

The systematic employment of abdominal massage is of great value. There are but few uncomplicated cases of intestinal atony in which the constipation does not yield to this form of treatment. In very persistent cases the manipulation must be practised daily, or on alternate days at least, for from eight to twelve weeks. To be effectual the movements must be deep.

Abdominal massage is much assisted by electricity; by the external application of moderately strong faradic currents good effects are usually obtained; or the faradic current may at times be applied internally, one electrode being placed in the rectum, the other on the abdomen. When the galvanic current is used, the rectum is filled with water before the negative pole is introduced, the positive pole being placed upon the abdomen.

In cases in which massage and electricity cannot be employed, excellent results are frequently obtained by injections of large quantities of oil, as recommended by Fleiner. When the conditions insisted on by Fleiner are fulfilled, the injections rarely fail. In a large number of cases in which the author has employed these injections for the treatment of this form of chronic constipation, they rarely proved unsuccessful. The regulations to be fulfilled are: 1. Only the very purest oil should be employed; olive oil is the best. 2. Large quantities of the oil (from 10 to 15 ounces),

heated to the temperature of the body, must be injected while the patient is resting on the back with the pelvis raised. 3. The injections must be given carefully and slowly, so that no air enters the colon. When air is introduced severe colicky pains are frequently produced and the oil is immediately ejected. 4. The oil must be retained in the bowels for several hours; for this reason it is best for the patient to remain in the reclining position for several hours after the injection has been given.

When the injections of oil and the other methods just mentioned cannot be employed, injections of other fluids, such as warm water, cold water, glycerin, may prove serviceable. The introduction of glycerin suppositories into the rectum, or the application of powdered boric acid to the mucous membrane of the rectum, sometimes gives relief.

The employment of cathartics is in most cases to be deprecated. Inasmuch as patients become quickly habituated to remedies of this kind and their effects gradually wear away, larger and larger doses become necessary. When cathartics must be given, the simplest are the best; and the various preparations of cascara sagrada probably head the list. Pills of strychnine sulphate, or the extract of nuxvomica with belladonna, are to be highly recommended, as tending to strengthen the relaxed condition of the bowels.

#### AMPUTATION IN OLD CASES OF INFANTILE PALSY.

In a monograph upon this subject (Thèse de Lyon, *Lyon Médical*, July, 1894), CÉSAR insists that operation would be of great benefit in many cases, from the complete uselessness of the affected members.

The following are the conclusions with which he concludes his paper:

1. The functions are interfered with.
2. They are the seat of lesions, such as trophic ulcers, arthropathies, multiple fractures, etc.
3. Following Poncet, he proposes amputation, justifying it by the functional impotence and nutritive disorders.
4. Amputation is especially applicable in the lower extremity, where the application of an artificial member permits of easier and better walking.
5. In the case of double atrophy of the lower limbs, double amputation (the one following at some interval after the other) will allow the patient a better chance to move about than with two useless limbs dragging after him.

6. Amputation of paralytic arms is often indicated, and the proper use of asepsis renders operation through unsound tissues less dangerous than formerly.

#### TREATMENT OF HEREDITARY SYPHILIS.

Under the head of "Direct Treatment," SIMON (*Revue Internationale de Bibliographie Médicale*, July, 1894) recommends for an infant of five to six weeks:

Liqueur de Van Swieten, gtt. xx.  
Four times a day in milk.

Simultaneously inunctions morning and evening of unguentum Neapolitanum,  $\frac{1}{2}$  to 2 grammes.

This treatment is continued for five to six months, after which the mixed treatment is presented.

Syrupus Gilberti,  $\frac{1}{4}$  to  $\frac{1}{2}$  a coffeespoonful in water.

For baths:

Sublimate, 2 grammes;  
Alcohol, 30 grammes.

For a bath of a quarter of an hour:

Bichloride of mercury, 4 grammes;  
Hydrochlorate of ammonium, 6 grammes;  
Water, 2500 grammes.  
Taken in a wooden bath-tub.

For "indirect treatment," when the mother or the nurse cannot be medicated, then apply mercurial frictions or administer potassium iodide to a goat or a jenny, and use the milk.

"Local treatment" for mucous patches: touch with solid nitrate of silver, iodoform, or calomel.

For ulcerations:

Corrosive sublimate, .25 gramme;  
Warm water, 100 grammes.

For osseous tumors, apply the plaster of Vigo. Separation of the epiphysis should be treated by fixation of the fragments. If the separation is complete, remove surgically as a foreign body.

#### DOUBLE CASTRATION FOR ENLARGED PROSTATE.

EKLUND (*Revue Internationale*, July, 1894) relates two cases reported by Raum ("Transactions de la Société Médicale de Christiania," January 17, 1894), in which cystitis persisted, and which disappeared like magic after the



removal of the testicles. The hypertrophy of the prostate decreased immediately.

#### ERYSIPELAS IN CHILDREN.

TORDEUS (*Therapeutische Blätter*, July, 1894) applies locally compresses saturated with,—

R Spirit camphor., 1000;  
Hydrarg. chlor. cor., .05.

Internally a solution of antifebrin and resorcin, in doses of as many centigrammes of antifebrin as the child is years old, and of resorcin twice as many centigrammes as the child is years old. This solution is given three or four times a day.

#### GONORRHOEA OF THE UTERUS.

In the *Centralblatt für Gynäkologie*, R. NOCH (*Therapeutische Blätter*, July, 1894) proposes the following salve:

R Alumnoli, 7.5;  
Lanolini, 100;  
Aque dest.,  
Glycerini, of each, 25.  
M. et ft. unguentum.  
Sig.—Inject every three or four days.

### Reviews.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS, WITH ESPECIAL REFERENCE TO THE APPLICATION OF REMEDIAL MEASURES TO DISEASE AND THEIR EMPLOYMENT UPON A RATIONAL BASIS. By Hobart Amory Hare, M.D. Fourth edition, thoroughly revised and enlarged.

Philadelphia: Lea Brothers & Co., 1894.

The following is part of the preface to the fourth edition of Dr. Hare's book:

"The fourth edition of this work having been called for in less than four years after the appearance of the first, the author has taken advantage of the opportunity to rewrite and add to many of the articles on drugs, remedial measures, and diseases, and to insert practical information concerning the value and prescription of the really useful remedies. Articles on methylene blue, chloralose, pyrogallol, condurango, convallaria, duboisine, and other remedies have been added to the part of the work dealing with drugs. In the part dealing with remedial measures other than drugs articles have been written on hypodermoclysis and enteroclysis, lavage, and upon mineral springs and climatic treatment. The latter article is

not intended to be exhaustive, but to give the general practitioner an idea of the therapeutic value of certain well-known resorts, in order that he may offer rational advice to his patients as to where they should go in search of health. Several new articles in the part devoted to the treatment of individual diseases have been inserted, and new or modified applications of the older remedies carefully noted throughout the entire book.

"In addition to these changes, the work has been revised in such a way as to render it uniform with the new U. S. Pharmacopœia. As that authority directs the use of the metric system, the doses of all drugs are given in both apothecaries' and metric weights, thus, 15 to 30 grains (1.0–2.0), so that the physician may conveniently use either system.

"It is hoped that this new edition will prove even more useful than its predecessors to the doctor who needs a book for ready reference in daily practice."

THE PHARMACOPŒIA OF THE HOSPITAL FOR DISEASES OF THE THROAT. Fifth edition.

Philadelphia: P. Blakiston, Son & Co., 1894.

This book contains the formulæ employed in the Throat Hospital in Golden Square, London, which was founded by Morell Mackenzie. Those who are called upon to treat this class of cases and who desire set formulæ will doubtless find this work of very considerable value. It has been carefully edited by Mr. Harvey, one of the surgeons to the hospital.

INEBRIETY OR NARCOMANIA: ITS ETIOLOGY, PATHOLOGY, TREATMENT, AND JURISPRUDENCE. By Norman Kerr, M.D., F.L.S. Third edition.

London: H. K. Lewis, 1894.

No practitioner of medicine goes through a year of professional life without having his attention called more or less directly to the treatment of inebriety in one of its forms. Not only is this true, but some of the most puzzling questions which he is called upon to decide arise in the treatment of this class of cases, for he is not only consulted by the patient, but by the patient's friends, who desire to know what the relationships may be, legally and morally, between themselves and the person who is affected. In addition to discussing his subject in a truly scientific and practical manner, Dr. Kerr has added very greatly indeed to the value of his book by his chapters on "Inebriety in its Medico-Legal Aspects," in which both English and American jurisprudence has been carefully studied, and the facility of ready

reference has been increased by a summary of each paragraph in heavy black letters set in the side of the text. The book is in every aspect to be highly commended, and is peculiar in the fact that it is of equal value to the specialist in the treatment of this class of cases and to the ordinary practitioner. While many of the prescriptions are somewhat more complicated than we would recommend theoretically, they all possess the advantage apparently of having had practical application.

**A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE.** By Austin Flint, M.D., LL.D. Seventh edition. Thoroughly revised by Frederick P. Henry, A.M., M.D.

Philadelphia: Lea Brothers & Co., 1894.

Among the large number of new books upon the practice of medicine which have been presented to the profession within the last few years, there is none which will stand better in the present or in the future than the seventh edition of this book, which has done as much for the reputation of American medical literature as any other single volume which any author has produced. It has been a characteristic of Dr. Flint's book, in its original form and under its various modifications produced by different revisers, that its description of clinical cases and of the practical side of disease has been always wonderfully true to life, and it is not surprising that this characteristic has not only been preserved, but added to by the careful editorial work of so conservative yet progressive a physician as Dr. Henry. Further than this, we think that the profession is to be congratulated that the publishers, in obtaining an editor, chose one so peculiarly well qualified to revise and bring up to date those articles in connection with which the greatest progress has been made in medical study, for Dr. Henry represents at once that side of professional life which appreciates all that which is good and at the same time is not so optimistic as to swallow in addition much that is bad. As the editor well says in his preface, he has constantly borne in mind the maxim, "Hold fast to that which is good," and in so doing has held fast to nearly all. Of the changes in this volume, we note that the chapters on Pathology have been very properly taken out, as pathology is now a subject which must be considered by itself. Among the new articles are ones upon Pulsating Pleurisy, Weil's Disease, Syringomyelia, Influenza, Hereditary Chorea, and a number of others, while the chapter upon Dyspepsia has been entirely remodelled on a modern basis; there are also good articles upon Amœ-

bic Dysentery and Amœbic Abscess of the Liver. We believe that the profession, the teachers, and the students of the country will appreciate this renovated volume as being one of the best, if not the best, all-around textbooks of the subject which they can obtain, and we congratulate Dr. Henry upon the successful completion of a task which was proportionately great with that of the reputation of the author and of his text-book.

**ANÆSTHETICS AND THEIR ADMINISTRATION.** By F. W. Hewitt, A.M., M.D., Cantab. Illustrated. London: Griffin & Co., 1893.

Notwithstanding the date on the title-page of this book, it has just been received for review. No one who reads its pages can fail to be impressed with the fact that Dr. Hewitt has brought to his pen the results not only of wide personal experience, but of a thorough knowledge of most of the literature connected with the important subject of anæsthesia. We note, however, in a number of places that he has failed to quote the most recent studies upon this important topic. The only reference that we find to the praiseworthy work of Lieutenant-Colonel Lawrie is in a foot-note on page 218, and the work of the Hyderabad Commission is referred to with almost equally scant reference, as is also the work which has been done in this country on the same subject. The article on Bromide of Ethyl is also imperfect for similar reasons. Although Howard's method of resuscitation is mentioned, various criticisms of it are ignored, and the improvements which have been made in it are not mentioned. The book may, therefore, be considered as being a useful summary of the subject up to about 1891 or 1892, and it is to be regretted that the author did not take the opportunity as the book went through the press of including the work which has more recently been performed.

With the well-known book of Dr. Lawrence Turnbull in this country and that of Dr. Buxton, of England, the profession is now supplied with three modern works upon the administration of those drugs which produce general surgical anæsthesia. All of them are exceedingly valuable, and every physician who uses anæsthetics constantly should be possessed of all three.

**A TREATISE ON DIPHTHERIA.** By H. Bourges, M.D. Translated by E. P. Hurd, M.D. Detroit: George S. Davis, 1894.

This book is one of the series known as the "Physician's Leisure Library" series, published by Mr. Davis, at twenty-five cents a

copy, during several years past, and it does much towards maintaining the high standard attained by previous issues of the series. After a careful perusal of its pages, we find that the author expresses the views which we believe to be the best and most recent upon the etiology and pathology of diphtheria, and carefully places in separate chapters all those conditions which have been confused with diphtheria under the head of "false diphtheria." He emphasizes the fact that the disease is primarily and strictly a local one. The chapter on Treatment is, we think, unnecessarily brief, but nevertheless good, although we do not find a description of those remedies to which we most frequently resort in this country. The hand of the translator is seen through many pages, and he has taken care that the apparatus made by American manufacturers and the work done by American bacteriologists should not be ignored. The book is to be commended to those who wish a good summary of our knowledge of the subject as it exists to-day.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, U. S. A. Vol. xv. Universidad to Vzoroff.

Washington: Government Printing-Office, 1894.

The fifteenth volume of this magnificent register of the medical literature stored in the library at Washington differs naturally in no way whatever from its well-known and most-valued predecessors, and as it extends to the letters named at the head of this review, it will be seen that practically the entire alphabet has now been covered, and that so far, at least, the work may be considered complete. To any one who desires at any time to refer to medical literature, recent or remote, this book is a priceless treasure, and the profession should act as a unit in urging upon Congress the importance of contributing towards equally laudable endeavors in that portion of government work which is so beneficent not only to the profession, but to the entire population of the country.

A SYSTEM OF LEGAL MEDICINE. By Allan McLane Hamilton, M.D., and Lawrence Godkin, Esq., with other collaborators. Vol. I. Illustrated. New York: E. B. Treat & Co., 1894.

We have examined the first volume of this very valuable contribution to medical jurisprudence with much interest. "Taylor's Medical Jurisprudence" has been for so many years, above all others, the authority upon such subjects, at least with the medical profession, that the introduction of a rival in literature is worthy of

note. The names of the contributors are in each case a guarantee of their articles, and the scope of each article is sufficient to discuss creditably the subject considered.

It is impossible in the brief notice which we can give this "System" to name all of the authors or even to give a summary of the table of contents. Some of the most familiar names are those of Dr. Mills, of Philadelphia, Dr. Dana, of New York, Dr. Vaughan, of Michigan, and Dr. Sturgis, of New York. The article upon the "Obligation of the Insured and the Insurer" is by that Nestor of the Philadelphia bar, R. C. McMurtrie.

Some of the illustrations through the volume are, unfortunately, not as good as the text.

This "System" is to be completed in two large royal octavo volumes of seven hundred pages each, and should be possessed by every physician, if for no other reason than that he may be able to defend himself in cases of blackmail or in other attempts to do him injury.

AERO-THERAPEUTICS, OR THE TREATMENT OF LUNG-DISEASES BY CLIMATE. By Charles Theodore Williams, M.D.

London: MacMillan & Co., 1894.

This book comprises the Lumleian Lectures for 1893, with an address upon the high altitudes of Colorado, and should be carefully studied by all those who are interested in the relation of climate to disease. It is particularly useful in that it records the personal experience of Dr. Williams with a large number of patients who have been sent away for climatic treatment, and also because Dr. Williams has personally examined into a number of the climates which he discusses. The book also gives us first-rate scientific information concerning many health resorts which few Americans frequent. Its chapters include, first, "The Factors and Elements of Climate;" second, "Temperature and Moisture;" third, "Barometric Pressure in its Relation to Health and Disease." The type is large and easily read, and the style pleasant, notwithstanding the conciseness of the text.

LES UNIVERSITÉS DES ÉTATS-UNIS ET DU CANADA ET SPÉCIALEMENT LEURS INSTITUTIONS MÉDICALES. Par le Dr. O. Laurent. Twenty-two figures and plans. Paris: G. Carré, 1894.

With more accuracy than is common on the part of French or Belgian writers concerning American medical facts, this author has described medical education and medical charities in the United States as he saw them while on an official visit to this country. He obtained numerous pictures, illustrating the insti-

tutions of which he writes, which are scattered in an interesting way through his volume, and although there are a number of familiar American names misspelled, and dollars and francs are sometimes transposed, the book will give a fair impression of our medical resources to the European who may desire to learn something of them through French text.

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## Correspondence.

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### *OPHTHALMIA NEONATORUM.*

To the Editors of the THERAPEUTIC GAZETTE:

DEAR SIRs:—The concluding portion of an address by Dr. G. E. de Schweinitz in the August number of the GAZETTE contains some very good suggestions, which I desire to slightly elaborate. In the first place, many surgeons seem to regard purulent ophthalmia as too small an affair to engage their attention, and so they write a prescription for a lotion and direct the nurse to apply it about so often. Unfortunately, it is often the case that the best nurses are not placed in charge of obstetrical nursing, but are given the more brilliant cases of abdominal surgery. In any case it is not a safe procedure. The surgeon should give these cases his personal attention, and the severity of the disease and the results of failure warrant as much care as any capital operation.

The room should be as carefully prepared as if an abdominal operation were to be made in it. All hangings, rugs, upholstered furniture, and unclean articles of every kind should be removed. No sweeping should be permitted, but instead damp cloths for cleansing. The surgeon and all attendants should have scrupulously clean hands and persons. All cloths used in cleansing the eyes should be of gauze or thin muslin, prepared by boiling, and should be kept in a glass jar in a one-per-cent. solution of carbolic acid. Every four to six hours the eyes should be washed out with a solution similar to this:

R. Acidi carbolicæ,  $\text{m}\cdot\text{v}$ ;  
Acidi boricæ, gr. x;  
Glycerini,  $\text{z}\cdot\text{i}$ ;  
Aque, ad  $\text{z}\cdot\text{iv}$ . M.

A small glass syringe does very well for washing the eyes. The lids can be very gently raised and the solution made to flow under them by very slightly depressing the piston. In handling the eyelids the greatest precaution must be observed. The surgeon's hands should

be softened by thorough washing in hot water, and at last dipped in two-per-cent. carbolic acid solution. After this cleansing, small pieces of single- or, at the most, double-thickness cloths should be taken from the jar and laid over the affected eyes and kept there until the next irrigation. As soon as the inflammation has begun to subside, coagulated egg albumin will be found to be a very useful application. It should be applied once daily and left on for at least one hour. It is prepared by taking the albumin of one egg in a shallow dish, and beating it with a lump of alum until it curds. A teaspoonful of this may be applied to each eye.

Some of the advantages of the treatment outlined above are that it will arrest mucous inflammation in any part of the body, and, further, that it is infinitely less painful than permanganate of potassium or bichloride of mercury, carbolic acid being distinctly anæsthetic.

W. L. WADE, M.D.

349 SOUTH BROADWAY, LOS ANGELES, CAL.

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### *HYDROPHOBIA; STATISTICS DESIRED.*

To the Editors of the THERAPEUTIC GAZETTE:

DEAR SIRs:—Will you permit me, through your columns, to ask that my professional brethren will communicate to me the occurrence of cases of so-called hydrophobia in their practice for the year 1894, from January 1, and so on until the end of this year?

I would like in all cases to learn: 1, the sex and age of patient; 2, (a) the kind of animal that is credited with the inoculation, (b) its state of health, (c) the provocation to bite (if any existed), (d) the reasons why the animal was (if it was) deemed rabid; 3, the seat of the bite (or other mode of inoculation); 4, the fact and method of cauterization (if any); 5, the time between the inoculation and the outbreak; 6, the symptoms of the outbreak,—the occurrence of mania or imitation of dog actions; 7, the remedies used and doses, with their seeming effect; 8, the issue of the case and when death occurred; 9, the investigations made to exclude the presence of disease other than so-called hydrophobia; 10, the findings on autopsy, if one was held.

I shall, of course, acknowledge in future publications aid received in continuing my studies in regard to this subject.

Yours respectfully,

CHARLES W. DULLES.

4101 WALNUT STREET, PHILADELPHIA, PA.

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## Original Communications.

### THE REMOTE RESULTS OF INTRANASAL OPERATIONS.

READ IN THE SECTION OF LARYNGOLOGY AND OTOTOLOGY  
OF THE PHILADELPHIA COLLEGE OF PHYSICIANS,  
OCTOBER 9, 1894.

BY RALPH W. SEISS, M.D.,  
Professor of Otolary in the Philadelphia Polyclinic.

WHILE reports of the successful results of operative procedures upon the nose fill, and perhaps encumber, medical literature, accounts of less favorable sequences are scarcely

to be found in text-books or journals. Yet it has certainly been the almost daily experience of every busy rhinologist to see cases in which there was at least a grave doubt whether a benefit or the reverse had resulted from any given operation.

For convenience of discussion intranasal operations may be divided into three classes,—those upon the turbinated bodies, those upon the septum, and those upon the pharyngeal tonsil. The most frequently performed operations upon the turbinated bodies are galvano-caustic incision and removal of some part of their substance by the nasal snare; curettage and the use of cutting forceps are usually

employed for very localized lesions only, and will not here be considered.

While the permanently good results of galvano-caustic incision in many cases is an assured fact, the writer certainly sees many patients in which even its very moderate employment has been an often very serious disadvantage to the case. This is especially the fact in examples of sclerotic rhinitis where the nose was burned in an early stage of the disease. The inevitable result is to greatly hasten the formation and contraction of the fibroid tissue elements characteristic of the disease, causing extensive scar changes, epithelial "dermoid" metamorphoses, and profound interference with the physiological functions of the nose. Such patients complain, often bitterly, of nasal dryness, of neuralgic pains about the nose and eyes, and especially of aural and laryngeal sequelæ,—deafness, tinnitus, cough, and irritable throat; all symptoms characteristic of the disease, but undoubtedly greatly hurried and aggravated by the very procedure which was intended to cure. Lachrymal obstruction from cicatricial contraction is also far from rare after the use of the electric loop, and should always be taken into consideration before operating.

The deep, light-colored, grooved, and often stellate scars of such operations are well known to all rhinologists, but their great importance is certainly often overlooked; so marked may be the interference with the functions of the nose, that even chronic bronchitis and nasal asthma are not excessively rare results of "thorough" use of the galvano-cautery. The prognosis of such cases is of necessity a gloomy one; the patient is doomed to breathe dry and unprepared air into the larynx and bronchial tubes, the fibroplastic changes set up tend to constantly spread along the mucous membrane and submucous tissues, and all that can possibly be expected is to arrest the changes by properly directed sedative, tonic, and, if need be, mildly stimulating measures.

Another class of cases in which both snare and cautery operations have often, if not usually, a most unfortunate result, is in examples of vaso-motor rhinitis. It might not be too much to say that all operations upon the turbinated bodies which are intended simply to reduce *vascular swelling* are worthless, if not injurious, in this disease, and that many of the procedures in vogue are most hurtful in their remote results. Excessive nasal irritability, spasmodic asthma, and marked constitutional depression are common sequels of the energetic use of destructive agents in vaso-motor condi-

tions. Such cases are not infrequently quite hopeless, and their treatment depends upon the needs of each particular case.

Operations upon the nasal septum very frequently result unfavorably, the condition of the patient at the end of one or two years after the operation being often worse than before. Septa which have been subjected to sawing or chiselling are especially liable to conditions of chronic irritation and vascular distention, frequently leading to ulcerative changes. Cartilaginous overgrowth (ecchondrosis) is also not infrequent, and the writer has often seen, after his own operations as well as after those done by other surgeons, new masses appear much exceeding in size the hypertrophy that was removed. Owing to its scanty blood-supply, the triangular cartilage is especially intolerant, and incurable ulcers, due to the scar changes incident to the healing of extensive cuts in this region, occur in quite a considerable percentage of cases.

Prognosis and treatment depend upon the conditions found in each patient, but disappointment is not seldom the only result to be obtained by the most careful and prolonged treatment.

The brilliant results secured by many operations by the removal of the pharyngeal tonsil have tempted many surgeons to operate upon nearly every case of "adenoids" which presents itself, and as a consequence examples of unfortunate results are not rare. One of the most common of these is persistent crust accumulation in the pharyngeal vault, due to cicatricial changes following the ablation. Mucus adheres to the scarred and atrophied mucous membrane and cannot be removed by hawking, and as there is often considerable pocketing at the vault of the pharynx, a thick crust gradually accumulates, which is most distressing to the patient. Naso-laryngeal irritability, together with an excessive *vulnerability*, have followed a number of operations upon adenoids under the writer's observations. Hay-fever-like paroxysms, repeated attacks of coryza and laryngitis, and neuralgic pains, especially about the sphenoidal sinus, seem to have been directly caused by the shock of the operations. While the writer has seldom, if ever, seen the brilliant improvement in hearing in cases of catarrhal deafness after operations for adenoids, which are so constantly claimed, few weeks pass that he does not see cases of acute or chronic ear-disease directly traceable to these procedures. The Eustachian salpingitis already present seems often to be lighted up with double intensity after the local shock of

an operation, and only great care can prevent serious middle-ear involvement.

The profound shock to the system at large is far greater after removal of the pharyngeal tonsil than is often taught; chorea in children and neurasthenia in young adults occur as a direct sequence occasionally, and great impoverishment of the general health is not very unusual.

The management of such cases is often one of great difficulty, and as cicatrized areas cannot be replaced, and the most "thorough" of rhinologists can find nothing more to remove, the condition of the patient is often a hopeless one so far as the local conditions are concerned.

It is not intended to discuss in the present brief sketch the various *accidents*, whether avoidable or otherwise, which may occur after nasal operations, as after any others, rendering them useless or harmful. It has been intended only to call attention to certain remote unfavorable results which occur in a considerable number of average cases.

Nasal operations have been so highly lauded, and the immediate results are often so gratifying, that rhinologists seem to have come to believe that the intranasal region is absolutely tolerant, and that all that is necessary to cure rhinitis is to destroy some part of the nasal tissues.

The writer has no wish to disparage the brilliant results due to nasal operative surgery, but he believes that great judgment and caution are necessary, and that no operation, however small, should be performed upon the intranasal tissues without a most careful consideration of its remote as well as the immediate results.

Many cases of nasal disease, even of obstructive type, call not for destructive measures, or perhaps for any local treatment, but are most benefited by tonics, electricity, rest, and proper exercise, all prescribed only after a careful general study of the case.

It should be remembered that the causes of many forms of rhinitis are wholly unknown, and that others are known to depend upon causes in the central nervous system, and to try to benefit such cases by the methods of the cabinet-maker seems scarcely scientific. What is most needed in rhinology is not new forms of operative technique, but studies in etiology and the dependence of nasal disease upon the system at large. Histological studies are also much needed, and have been sadly neglected since the study of the fission fungi has become so fashionable.

## THE TREATMENT OF GONORRHOEA BY IRRIGATION OF THE URETHRA.

By H. M. CHRISTIAN, M.D.,

Chief of Genito-Urinary Dispensary, University of Pennsylvania,  
service of Dr. Edward Martin.

IT is proposed in this article to give the results obtained by the writer in the treatment of gonorrhoea by daily irrigation of the urethra.

A large majority of the cases treated were patients at the Dispensary for Genito-Urinary Diseases, University Hospital; a few are taken from the case-book in private practice.

The remedies used for the purpose of irrigation were bichloride of mercury, nitrate of silver, permanganate of potassium, and trikresol. The irrigator employed was the ordinary glass-jar irrigator used in surgical clinics, and was suspended by a rope, working over a pulley, at a height of six feet above the penis, the patient standing.

The Kiefer nozzle was used in all cases, except in those instances where it was found to be too large to enter the meatus properly; in such cases the soft-rubber catheter was employed. In irrigating the urethra, one quart of the solution—warm, not hot—was used daily for a period of two weeks. In a few cases treatment was continued for three weeks; it was, however, observed that no permanent benefit resulted from this extra week's treatment. In other words, whatever result was obtained from irrigation was always apparent at the end of two weeks, and no distinct advantage was ever gained by prolonging the daily irrigation beyond that point.

Treatment was begun in all the cases in the first week of the disease. Purulent discharge from the urethra, ardor urinæ, and chordee were present in all. Microscopical examination of the discharge was made in every case.

It will be understood in the statistics given below that those cases in which gonococci were found are classified as infectious; where, upon repeated examination, no gonococci were found, the case is classified as non-infectious urethritis.

1. *Bichloride of Mercury*.—Strength of solution, 1 to 15,000, increasing the second week to 1 to 8000. Number of cases treated, 20; infectious, 19; non-infectious, 1; improved by treatment,—i.e., discharge becoming less in quantity and thinner,—8; number unimproved, 11; cured, 1; number in which ardor urinæ and chordee were lessened by treatment, 18; number in which ardor urinæ and chordee were not benefited, 2;

number of cases in which posterior urethritis developed, 2; number of cases in which epididymitis developed, 0; number of cases in which gonococci were found in discharge at end of fourteen days' treatment, 19.

2. *Nitrate of Silver*.—Strength of solution, 1 to 6000, increasing in second week to 1 to 3000. Cases treated, 20; infectious, 18; non-infectious, 2; improved by treatment, 13; unimproved by treatment, 6; cured, 1; number in which ardor urinæ, etc., lessened, 20; number in which ardor urinæ, etc., unaffected, 0; number developing posterior urethritis, 2; number developing epididymitis, 0; number in which gonococci were found at end of fourteen days, 16.

3. *Potassium Permanganate*.—Strength of solution, 1 to 4000, increasing in second week to 1 to 2000. Cases treated, 20; infectious, 16; non-infectious, 4; improved under treatment, 10; unimproved, 3; cured, 7; number in which ardor urinæ, etc., lessened, 19; number in which ardor urinæ, etc., unaffected, 1; number developing posterior urethritis, 2; number developing epididymitis, 1; number in which gonococci were found at the end of fourteen days, 5.

4. *Trikresol* (Schering).—Strength of solution, one-half of one per cent. Cases treated, 10; infectious, 10; non-infectious, 0; improved, 1; unimproved, 9; cured, 0; number in which ardor urinæ, etc., lessened, 1; number in which ardor urinæ, etc., unaffected, 9; number developing posterior urethritis, 0; number developing epididymitis, 0; number in which gonococci were found at end of fourteen days, 10.

From a glance at these statistics it will be seen that, as regards therapeutic value, these four remedies stand in the following order: first, permanganate of potassium; second, nitrate of silver; third, bichloride of mercury; and, fourth, trikresol. By far the most valuable remedy in urethral irrigation is permanganate of potassium. It is simply using in a new way what has long been known to every man about town to be a most potent drug in the treatment of gonorrhœa. It will be noted that gonococci were found in the discharge at the end of two weeks' treatment in only five cases.

Irrigation of the deep urethra with a 1 to 4000 permanganate of potassium solution is the very best method of treating acute posterior urethritis, and will result in a cure in most cases in from about three to five days.

Nitrate of silver follows permanganate of potassium very closely, but does not appear to dry up the discharge as quickly or as well.

In regard to bichloride of mercury, it was evident that those solutions which were strong enough to have any positive antiseptic effect irritated the urethra and increased the ardor urinæ. On the other hand, the weaker solutions appeared to act very little better than so much water on the discharge.

Trikresol is a coal-tar product manufactured by Schering, similar in every way to carbolic acid. Solutions of the strength of one-half of one per cent. were found to be very irritating to the urethra, increasing in a marked degree the ardor urinæ. Solutions of a quarter of one per cent. had little or no effect upon the discharge.

Seventy cases in all were treated by irrigation. Of these, seven were cases of simple urethritis. Thirty-two were improved by treatment,—that is to say, the condition at the end of two weeks was simply a thin muco-purulent discharge at meatus in the morning; no ardor urinæ or chordee or frequent and imperative urination; further irrigation did not improve this condition. These cases were all cured in about two weeks more by use of some astringent injection two or three times daily.

In twenty-nine cases the discharge was not at all affected by irrigation. These patients showed marked improvement in their condition upon beginning the use of a urethral injection containing bismuth and hydrastis, and the use internally of a capsule containing sandal-wood oil and copaiba.

Nine of the cases were cured within the two weeks. Of these, seven were cases of non-specific urethritis. Of the nine cases cured, seven were cured by permanganate of potassium. Gonococci were found in small quantity in the discharge after two weeks' irrigation in fifty cases.

Posterior urethritis only occurred in five, and epididymitis in one instance.

It should be noted that in fifty-eight cases the ardor urinæ and chordee were entirely relieved by irrigation; and of the twelve cases in which these symptoms were not affected, nine were treated by trikresol, a remedy which was shown to be very irritating to the urethra.

The results obtained in the treatment of these cases seem to warrant the following conclusions being drawn:

1. That irrigation is a distinct advance in the treatment of gonorrhœa; in fact, up to a certain point, it must be considered the proper treatment for that disease. It relieves ardor urinæ and chordee more promptly than any other form of treatment. It is attended with a much smaller proportion of complications, such as total urethritis and epididymitis.



2. That permanganate of potassium is the best remedy for the purpose of urethral irrigation.

3. That irrigation of the urethra alone cannot be relied upon to absolutely cure specific urethritis.

For the cure of the thin muco-purulent discharge which appears at the meatus in the morning, some astringent injection used by the patient himself is necessary.

4. That simple non-infectious urethritis can be cured in from ten to twelve days by daily irrigations with permanganate of potassium.

The writer is of the opinion that, where it is possible to carry out the treatment, irrigation of the urethra with solutions of permanganate of potassium *twice* daily would very materially lessen the duration of the disease. This is, of course, impracticable in dispensary practice. I am now employing at the Dispensary of the University Hospital daily irrigation with permanganate solution, combined with the internal use of a capsule containing five minims each of oil of sandal-wood and oil of copaiba. The results obtained in these cases will be published at another time. It might be well to mention here that, for the purpose of irrigating the urethra completely, the Kiefer nozzle is not by any means all that could be desired. The blunt nose of the nozzle will not fit properly every meatus. On the other hand, it is very doubtful whether the urethra is irrigated to any great extent by its use, as it was observed in almost every case that the irrigating fluid would make a short circuit in the urethra from the point of entrance in the nozzle to the point of exit.

The best results were obtained from the use of a soft-rubber catheter several sizes smaller than the calibre of the urethra, allowing the solution to escape easily along the side.

The following table will show at a glance the results obtained by urethral irrigation:

# *PNEUMONIA TREATED BY ICE-COLD APPLICATIONS.*

By W. FRED. JACKSON, M.D., C.M.,  
Physician and Surgeon to the Fairknowe Orphans' Home;  
Member of Staff of Brockville General Hospital,  
Brockville, Ontario, Canada.

BETTER results are always to be desired, until we have reached complete success. If we may believe statistics of results attained by the prevalent modes of the treatment of pneumonia, progress has not been made in the proportion of recoveries for the last forty years. Under the ancient usage of bloodletting, starvation, and the liberal use of calomel, we have recorded a death-rate in pneumonia ranging from ten to fifteen per cent. The figures given by several of the larger hospitals of the world during the last few years, and during which time the former methods just enumerated have fallen into abeyance, show a mortality of not less than twenty-two per cent., ranging at times much above this figure. I think it fair to argue from this that the alterations in the methods of treatment have not been made in the right direction, and that better results are still to be desired. We have gained the *suaviter in modo*, but we have lost the *fortiter in re*. We have made it pleasanter for the patient at the expense of his welfare.

To the October number of this journal for 1892 I contributed an article detailing the results attained in twenty-five consecutive cases of pneumonia treated by the application of ice-cold compresses to the chest-walls. The cases were not detailed at length, but the results given showed that all the cases but one recovered, and that all these recoveries were remarkably prompt and rapid, with the exception of one. This case was complicated with very extensive fibrinous pleurisy, but eventually made a perfect recovery.

The case that died was in the person of a wretched alcoholic woman, who led a miserable life. Albuminuria was a symptom of grave import observed during the illness, and there

Drug employed.	Number of cases.	Infectious.	Non-infectious.	Improved.	Unimproved.	Cured.	Gonococci found at the end of two weeks' treatment.
1. Permanganate of potassium.....	20	16	4	10	3	7	5
2. Nitrate of silver .....	20	18	2	13	6	1	16
3. Bichloride of mercury.....	20	19	1	8	11	1	19
4. Trikresol .....	10	10	0	1	9	0	10

was also concurrent general peritonitis. Post-mortem examination revealed contracted kidneys and cystic degeneration of both organs, so that a fatal event under any form of treatment was not to be wondered at.

Upward of a dozen of these cases were afterwards written out in detail, and were published subsequently by Dr. Thomas J. Mays, of Philadelphia, in an article embodying a collective investigation of the treatment of pneumonia by the method indicated by the heading of this article.

As I cannot lay my hand upon Dr. Mays's paper at the present moment, I may, I hope, be pardoned for want of exactitude in quoting it. But, if my memory serves me aright, I believe the mortality as given by the series of cases referred to was about four per cent. I think this is the correct figure. At any rate, I have now seventeen additional consecutive cases of pneumonia treated by the method of ice-cold applications to the chest, in which recovery has taken place without exception. All the recoveries were prompt and satisfactory, with the exception of a single instance. This one, like the one of the first series, was a very severe case of double pneumonia, likewise complicated with extensive fibrinous pleurisy, and a good recovery was eventually attained.

In the course of these series I treated two other cases, but by the prejudices of members of the families I was not permitted to carry out the cold applications. They were, therefore, treated by the methods ordinarily in vogue,—viz., stimulating applications to the chest, the administration of drugs to relieve the pain and fever, and the use of stimulants. Both of these cases died.

These two series of cases—numbering forty-two in all—are, I think, a sufficient test to place the results attained beyond peradventure; and I ask every reader to candidly say, in the light of his personal experience, whether these are or are not better results than are ordinarily attained, and also whether the special method of treatment may not fairly be given the credit for the large proportion of recoveries.

It will simplify and shorten this article to state at once that in all cases of the series about to be enumerated, there was exhibited a mixture which was about as follows:

R. Liquor. ammon. acetatis, ℥iv;  
Spir. ætheris nitrosi, ℥i;  
Syr. scill., ℥i;  
Syr. acacia, q. s. ad ℥viii. M.

Of this, from a dessert- to a tablespoonful was given, diluted with water, every hour or

so, as the case seemed to demand. Various drugs were also used with this combination as indications arose. Of these, strychnine, digitalis, nitro-glycerin, caffeine, potassium iodide, etc., were given *pro re nata*.

The ice-water applications were made by means of large towels, or of suitable pieces of cloth, which, having been wrung out of ice-water, were tucked about the chest, covered with a piece of flannel, and kept snug with a roller bandage. These were changed as frequently as they approached the body-heat, until the temperature fell to normal. After this they were renewed during another twenty-four hours only as they became dry, after which their use was discontinued.

The following is a synopsis of the cases:

CASE I.—Female, aged twenty-three years; right lobar of base and concurrent general peritonitis; temperature, 103° F.; pulse, 120; normality on fourth day; sat up on fifth day.

CASE II.—Male, aged thirty-one years; double lobar pneumonia; hepatized up to nipple-line on both sides; typhomania, with picking the bedclothes, and insomnia; has been under treatment six days by hot applications and alcohol; attendant resigned the case as hopeless this day; cold applications and the alkaline mixture above mentioned with digitalis and trinitrin; normality on third day by crisis; recovery.

CASE III.—Male, aged seven years; right lobar of base; great pain and dyspnœa; temperature, 104° F.; pulse, 140; ice compresses abolished pain in two hours; normality in eighteen hours; recovery.

CASE IV.—Female, aged thirty-four years; pneumonia developing in left apex; temperature, 105° F.; pulse, 106; cold aborted this case in thirty hours.

CASE V.—Female, aged eighteen years; pneumonia, entire left lung; temperature, 104° F.; pulse, 120; ice compresses relieved pain in eight hours; normality in thirty hours; recovery.

CASE VI.—Male, aged forty-four years; lobar pneumonia, left upper half of lung; concurrent pleurisy over whole lung; great pain and dyspnœa; temperature, 105° F.; pulse, 120; pain relieved in seven hours; normality regained fourth day; recovery.

CASE VII.—Male, aged six years; right lobar pneumonia of base, *with concurrent endocarditis*; very ill and much depressed; temperature, 104° F.; pulse, 140; ice compresses on lung and over heart; sixth day, temperature 99.4° F.; seventh day, normal.

CASE VIII.—Male, aged nine years; right

lobar pneumonia; temperature,  $104^{\circ}$  F.; normality on third day,—*i.e.*, after forty-eight hours of the cold applications.

CASE IX.—Female, aged forty years; right basic pneumonia; took ill Friday P.M.; saw her Saturday noon; normal, Sunday A.M.; recovery at once.

CASE X.—Female, aged twenty-eight years; right basic pneumonia; temperature,  $104^{\circ}$  F.; pulse, 120; respiration, 36; very severe case; crisis on eighth day, and recovery.

CASE XI.—Male, aged nineteen years; lobar pneumonia, both bases; very much depressed; looked like a typhoid case; crisis on sixth day; recovered.

CASE XII.—Female, aged twenty years; lobar pneumonia, whole of left and base of right lung; concurrent fibrinous pleurisy; an exceedingly severe and anxious case; recovered after a long and painful illness. Expresses herself to the effect that the cold helped her to breathe, and feels that but for its help she must have given up and died. The pleurisy has left adhesions on both sides.

CASE XIII.—Male, aged sixteen years; right basal pneumonia; temperature,  $106^{\circ}$  F.; pulse, 160; respiration, 46; relieved at once by cold; ill five days; recovered.

CASE XIV.—Female, aged forty years; right lobar pneumonia of base; severe case; high temperature and much dyspnoea; no notes, as surroundings were too bad to take them; attended her four days; recovery.

CASE XV.—Male, aged forty-five years; double basic pneumonia, worst on left side; temperature,  $105^{\circ}$  F.; pulse, 130; respiration, 48; an alcoholic case; cold gave relief within fifteen minutes; after eighteen hours' application, crisis, with temperature  $98.4^{\circ}$  F., pulse 80, respiration 24, and so persisted; recovery.

CASE XVI.—Female, aged ten years; lobar pneumonia, right apex; temperature,  $104^{\circ}$  F.; pulse, 116; cold compresses; relief; fourth day, temperature  $99^{\circ}$  F., pulse 80; fifth day, normal, by lysis; recovery.

CASE XVII.—Female, aged twenty-five years; lobar pneumonia, right base; temperature,  $102^{\circ}$  F.; pulse, 110; much pain, dyspnoea, and rusty expectoration; crisis in thirty hours; normality; recovery.

Aside from the routine application of the cold compresses, each case was treated rationally on its own merits. The alkaline mixture indicated above was given to every case, but modified to suit individual requirements. This was not done with any idea of a specific action of either the medicines or the cold applications. The plan of treatment pursued seeks to

promote a derivation of the blood towards the skin and kidneys, thereby to produce free diaphoresis and diuresis. When this occurs during the free application of cold over the affected lung, a crisis generally ensues, and the case comes to a speedy and favorable termination.

The treatment as herein indicated is followed out upon the conception that pneumonia is an essential febrile disease, of which the lung-lesion is but an incident. I have frequently seen the febrile symptoms of pneumonia in full swing many hours before any pulmonary symptoms whatever were to be detected. I presume this is the experience of every medical man who has been observing disease for any considerable length of time, and goes far, I think, to support the contention above advanced as to the essential nature of this disease.

In concluding this article I would utter a word of warning, the result of personal experience extending over a period of twenty years. It is this: opiates, coal-tar derivatives, and medicinal depressants are exceedingly dangerous in the treatment of pneumonia, and I believe that many of the cases of sudden death which occur in this, the prevailing disease of our cold months, are to be attributed directly to the administration of one of the aforementioned medicaments. I believe that the elimination of these classes of drugs from the treatment of pneumonia would greatly lessen the death-rate; and I also believe that the lessening of bodily temperature, quieting of the circulation, the relief of pain, and the general bodily comfort promoted by the application of cold-water compresses, when once observed, will carry conviction to the most incredulous person.

This treatment was very strongly advocated by Niemeyer upward of twenty-five years ago. I remember well that it was discussed by our professors at college when I was a student, but it was decided, without experiment, to be altogether too dangerous an expedient. It was thought the application of cold to an inflammation would only result in disaster.

After having been misled by this theory for, alas! only too many years, I have eventually become emancipated from it; and I am firmly convinced that a happier era will dawn for both physician and patient when the true value of ice-water applications in the treatment of pneumonia becomes generally known, and accepted by the profession as an orthodox procedure.

BROCKVILLE, ONTARIO, September 1, 1894.

## HYDROTHERAPY IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

BY KARL VON RUCK, M.D., ASHEVILLE, N. C.,

Director of the Winyah Sanitarium for Diseases of the Lungs and Throat.

**T**HERE is probably no disease in which more remedies have been recommended and tried than in pulmonary tuberculosis, and among the many other therapeutic agents, according to prevailing theories at particular periods of time, the application of cold water has been in more or less favor for the cure of the disease in question.

The use of cold water in the course of chronic pulmonary tuberculosis has, however, been largely restricted to institutions, owing to the necessity of trained attendants and the supposed requirements of special outfit in its practical application.

In America much less attention has been paid to its employment than in Europe, and beyond the efforts of Dr. Simon Baruch, of New York, to obtain for it proper recognition, American writers on pulmonary tuberculosis have either ignored it or, at most, mentioned it only in a passing way.

It is now my purpose to present to you the outcome of my experience with the remedy, after having made use of it for the last six years in my special institution for consumptives, where it has been employed in various forms in many hundreds of cases.

In doing so I may state at once that by hydropathic means alone we cannot hope to cure pulmonary tuberculosis, and wish to warn against enthusiastic advocates, who, in their zeal, are apt to neglect all other remedies and depend upon water as a sole means of cure.

Nothing is so fatal to any real advance in phthisio-therapy as the constant endeavor to find one single remedy wherewith to cure our patients, and while the search for better ones, or for specifics, may be entirely proper, the clinician who must treat his cases to-day and to-morrow cannot afford to place his faith and stake the life of his patient upon the current "fad;" but he must sift the wheat from the chaff, and construct for himself a rational course of procedure adapted to the present condition of his patients, and in the light of the indications choose wisely from the remedies which experience has shown to be of value.

In so doing I have found that I have had real and substantial aid from the use of water, and that it has fulfilled certain indications,

presently to be considered, better and more satisfactorily than other means within my reach. I also find that any intelligent person can be quickly taught to carry out the treatment, and that no special apparatus or bath establishment is needed; indeed, all its advantages can be derived from applications so simple that they can be had or be improvised in almost any private dwelling. This is the more fortunate, inasmuch as it brings the method within the reach of every general practitioner, and thus also of patients who cannot afford to seek the benefits of special sanatoria.

The first of the indications for which I can recommend to you the use of cold water most heartily is improvement of the nutritive processes.

To this end we can employ the cold rub, the cold full bath, or the shower-bath, or a combination of them. Beginning with a new patient, the cold rub is given in bed, the night-clothing being removed and the patient covered with a woollen blanket, using water at 90° F., with a wash-cloth or bath-glove pressed out, so that it will not drip, and with a few strokes apply the water quickly and in succession to the arms, chest, and abdomen, the lower limbs, and lastly to the back. Each part, after the water is applied, is quickly dried and then vigorously rubbed with a coarse bath-towel until a gentle glow of the skin is produced. The whole procedure requires less than five minutes, unless, on account of slow reaction, prolonged friction is necessary. With each successive part the wash-cloth must again be put into the water and pressed out as before.

Every two or three days the water is used several degrees cooler, until we reach a temperature of 50° F., the rapidity of reduction in temperature depending upon the readiness of reaction of the peripheral circulation.

Every patient, unless suffering at the time from pulmonary hemorrhage, is eligible to the cold rub.

The cold bath is simply a full immersion for a few seconds in a bath-tub, and must be followed by quick and vigorous friction; it acts more powerfully than the cold rub. The temperature of the water is to be graduated the same as for the cold rub; the contraindications are actual or recent hemorrhage or bloody expectoration, great general debility, and the presence of the menstrual flow; it is best suited for the early stage.

The cold shower is given in the empty bath-tub with the same regulation of temperature of

the water; the time should at first be only a moment, and should never exceed more than two or three seconds. A shower can be easily improvised in the patient's room, if necessary; dry friction must follow. It acts still more powerfully than the cold rub or cold bath. It should not be used with patients who are weak or debilitated and have subnormal morning temperature, who react slowly from the rub or bath, nor with such as have at the time acute processes in the lungs; hemorrhage or menstruation also forbids its use.

As stated before, the temperature of the water must be slowly reduced, and in the summer months cooling with ice is, of course, necessary.

All patients learn to like these cold applications; they are simple and easily given, and I do not know that we have anything to substitute for them. In one form or other they become the daily practice with every case and during the entire course of treatment, and must be recommended for regular employment after a cure has been established. Their effect becomes soon manifest in a better cutaneous circulation, the patient feels exhilarated, and his appetite improves.

Whatever may be your estimation of the value of the cold full bath, for fever accompanying other diseases, I desire to warn against its use in septic fever, which is the form we encounter in the advanced cases of pulmonary tuberculosis.

These septic fevers are the results of destructive changes in the lung, under which breaking down, suppuration, and expulsion of dead tissues occur, and any immersion in water cold enough and long enough to materially reduce the temperature in such debilitated subjects is fraught with the greatest dangers from severe pulmonary congestion, hemorrhage, and heart-failure. For the purpose of reducing temperature I have discarded every other form except the use of the ice-bag and the cold pack, but find these of great value, incomparable to the use of any known antipyretic drug preparation. The cold pack consists of the use of three or four thicknesses of linen crash towelling wide enough to reach from under the arms to the middle of the abdomen and long enough to pass around the body and lap over several inches in front. Several such sets must be in readiness, and while one is in use the others are kept drying.

The towelling is wrung out of the water and applied covered with a flannel binder; the temperature of the water is quickly reduced

from 90° to 60° or 50° F.; the latter degrees can, as a rule, be reached in three or four days.

In cases where the temperature rise begins with chill, reaction from the latter must have been established before the cold water is applied, and I have frequently averted the chill by using hot-water packs for an hour before and for an hour after the time at which the chill occurred on the previous day, then reducing the temperature of the water five to ten degrees lower for each change until the desired cold is reached. According to the degree of fever, the temperature of the water used, and the effect obtained, the packs are changed every fifteen to thirty minutes, or less frequently, and this is to be kept up the entire period of the day during which the temperature is above 100° F. When the packs are discontinued for the remainder of the day or night, the chest is washed off with alcohol and rubbed with a little cocoa-nut oil. After a little experience the changing requires but a moment.

Apart from the slight chilly sensation, which passes off quickly, when the wet pack is applied, a few patients complain of constant chilliness; under such circumstances the temperature of the water must be increased and stimulants administered. Exceptionally the treatment must be discontinued entirely on that account.

I find this method most valuable in the management of obstinate fever cases and incomparably better than the use of antipyretic drug remedies.

Under the use of the pack, the pulse improves, most patients derive great comfort, and the temperature is materially and more lastingly influenced for the better. In milder cases of fever, an ice-bag over the region of the heart during the hours of fever produces equally satisfactory results.

There are other conditions and complications in the course of chronic pulmonary tuberculosis for which writers on hydrotherapy recommend the use of water. After much and painstaking observations, I find that the water treatment can be dispensed with in preference to other modes of procedure, but for the purposes indicated hydropathic applications have been a great help in my special work of treating consumptives, and I am confident that if you will give your patients all proper care in other directions, you will find that this addition to your resources will always help and often turn the vacillating scale in the right direction.

*THE USE OF HYPODERMICS OF ALCOHOLIC STIMULANTS FOR THE RESUSCITATION OF STILL-BORN INFANTS.*

BY BEDFORD BROWN, M.D., ALEXANDRIA, VA.

I, in common with others of our profession, have found it not infrequently extremely difficult, and too often, to my disappointment and chagrin, impossible, to resuscitate still-born infants. The loss of an infant at birth in large families may not be a great source of grief, but there are circumstances under which it may become of infinite importance to preserve the life of the child at birth. However, leaving out considerations of this kind, it is always desirable to the attending physician to save the life of every new-born infant intrusted to his care.

During the past three or four years, in several cases of this kind, apparently under the most hopeless circumstances, when all other standard methods had failed, I have resorted to hypodermics of brandy or whiskey, with the most satisfactory results. Such have been the prompt results in these cases that I now, when a case of this kind presents itself, resort to this remedy in the very beginning, as soon as I find that I have a still-born infant to resuscitate, and I am never disappointed in the results. Except in some rare cases where life has ceased some time before birth, I feel satisfied that I could use this remedy, to the exclusion of all others, with positive reliance.

A hypodermic of 5 or 6 drops of the stimulant is administered in first one arm and then the other, and promptly the circulation and entire nervous system respond to its action. In the case of the still-born infant, cold, limp, apparently lifeless, without cardiac action or pulse, and entire absence of respiration, the first act of the infant under the effect of the stimulant is to widely expand the eyelids. Then, in place of the dark lividity of the complexion, a sudden roseate hue extends over the entire surface; then an inhalation, followed by a sudden sharp cry, denoting that the machinery of the circulation and respiration is in operation and life restored.

So far, in all instances in which I have resorted to this remedy in this class of cases, it has never failed to restore the action of the heart, the circulation, the respiration, and heat-germinating processes promptly.

In a recent case of this kind, after a long, tedious labor, in which the infant's head was greatly compressed, and at the time of birth

was apparently hopelessly dead, and in which there was entire absence of all cardiac action or respiration, 5 or 6 drops of brandy injected in each arm produced magical effects, after all the standard methods had been resorted to for resuscitation and had signally failed. In this case a sudden and wide expansion of the eyelids, a gasp, then a deep inspiration, when a universal rose color diffused itself over the surface in place of the dark, livid complexion, then a sharp cry, and cardiac action and respiration were set in motion and life restored.

In the several cases in which I have tried the remedy—all marked cases of asphyxia of the new-born—the effects have been wonderfully quick, prompt, and certain. But there is one class of the still-born in which it can avail nothing. In this class of which I speak, the mother has suffered alarming antepartum hemorrhage and the infant's circulation has been drained of all blood before birth, and the still-born in this case presents the appearance of an infant made of pure white wax, instead of the lividity of asphyxia. In its practice we must draw a line of distinction between these two classes of cases, or we will be disappointed.

In another class of cases—that of the still-born resulting from the action of ergot on the circulation of the child through the mother—it is available. In this particular condition the tonic contraction of the uterus caused by the ergot has effectually served to cut off the supply of oxygen to the foetus, and consequently it becomes asphyxiated and at birth is a still-born child. We know that a large proportion of infants born under such circumstances are never resuscitated.

In a case of this kind, in which the infant was to all appearance dead, after all scientific methods had failed and the case had been surrendered by the physician, hypodermics of whiskey were given in both arms and then in the back, with the most satisfactory results.

After my experience in this case, I feel that I am at liberty to say that the hypodermic treatment of the still-born from the action of ergot will prove effectual, if not in all, certainly in a large majority of these cases.

Now, in regard to the quantity of stimulants that the system of a still-born infant can bear, I will state that 15 drops is the largest quantity ever given in a single case by myself, but I feel sure that an asphyxiated infant can bear with safety twice that amount.

# THE TREATMENT OF EPITHELIOMA OF THE SKIN.

READ BY TITLE AT THE ANNUAL MEETING OF THE STATE  
MEDICAL SOCIETY OF PENNSYLVANIA, MAY 16, 1894.

BY M. B. HARTZELL, M.D.,

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IT is the purpose of this paper to consider briefly the treatment of epithelioma from the dermatologist's point of view rather than from that of the surgeon; consequently, it will deal chiefly with the early stages of the disease and with the smaller and more superficial lesions. I have chosen this somewhat trite but always interesting subject because I believe that, notwithstanding the serious prognosis which attends this malady, in many instances proper treatment, undertaken at the right time, will result in cure; or, when this may not be attained, the patient may be spared much disfigurement and pain and a fatal issue be rendered remote. The neglect of small and superficial epitheliomata, not by the patient, but by his medical adviser, is often responsible for the most serious results and the too frequent failure of treatment, which is only undertaken because it can no longer be deferred. A small nodule, which could readily be removed or destroyed when it first makes its appearance, is allowed to remain, it may be, for years without interference, until it suddenly takes on unexpectedly vigorous growth and rapidly involves structures and important parts, resisting all efforts with the knife or caustic to stay its progress.

Before considering the various methods of treatment it may not be amiss to emphasize anew the paramount importance of early interference. If treatment is begun while the lesion is small, not only will serious disfigurement be less apt to result, but the chances of permanent cure will be enormously increased. It is this fact which leads me to give special prominence to certain methods which, on account of the ease of their application, are more likely to be employed early by the physician and submitted to by the patient than the more strictly surgical procedures.

As to the various remedies to be employed, there is no specific for carcinoma; all internal remedies which have been lauded as curative have failed completely when submitted to the test of experience. There is but one way in which to successfully cope with the disease, and that is to remove or destroy it by local treatment. There are various ways in which this destruction may be accomplished, and

each has its appropriate uses, its advantages and disadvantages. In many instances excision is the speediest and surest way to remove the neoplasm, but there are various reasons why this cannot always be done. In many cases an insuperable obstacle is met in the refusal of the patient to submit to anything like a surgical operation for what he regards a small affair, and this is a serious obstacle and one of the chief reasons why small and as yet comparatively benign growths are not oftener removed early. When excision is selected as the method of treatment, it is to be performed according to the ordinary rules of surgery, and it will not be considered further here, except to call attention to the ease with which small epitheliomata may be painlessly excised with the aid of cocaine anæsthesia.

Another operative procedure more or less frequently employed is erosion or scraping out the diseased tissues with the sharp spoon or curette. The manner of using this instrument is probably familiar to you all, but I wish to say a word as to the real usefulness of this method of treatment, since I have very well defined notions concerning it which are not in exact accord with those generally entertained. The usefulness of the curette, when used alone, is very limited, since it is next to impossible to remove the growth completely with it, and partial removal is time wasted; half-way measures are not to be tolerated in this disease. If, however, after thorough scraping, an active caustic is applied, good results are often obtained.

Another method of dealing with this malady is by cauterization, either with the actual cautery, as by the thermo-cautery or galvano-cautery, and by chemical caustics. Both the Paquelin and the galvano-cautery are efficient and manageable, and they may be advantageously employed when the growth is small or when hemorrhage is to be feared. The actual cautery, however, is in most instances very painful, and is apt to produce cicatrices more disfiguring than those which result from the chemical caustics or excision. Furthermore, it is not always easy to persuade the patient to permit its use, since there is something especially terrifying in the idea of being burned.

But of all the means at our command for the treatment of epithelioma, such as are under consideration, the chemical cauterants are the most generally useful. I am well aware that this statement will not meet with general approval, and that it is not in accordance with

the opinions generally held, especially by surgeons; but a not inconsiderable experience leads me to believe that the complete destruction of the morbid growth can be more readily and, in some instances at least, more thoroughly attained by the proper use of caustics than in any other way. An important advantage possessed by these agents is that their use is rarely objected to by the patient; in consequence, early treatment is much more apt to be submitted to. The list of caustic substances which have been employed is a considerable one, and it is not a matter of indifference which one we employ, since these differ widely as to the amount of pain produced, their penetrative power, and the rapidity with which they destroy.

In our choice of a caustic, we should, first of all, be guided by the thoroughness with which the tissues are killed; the mild ones, which act only superficially, should be rejected, and such substances as lactic acid and the more recently introduced trichloroacetic acid are altogether unsuited for the treatment of these lesions, since they do not penetrate deeply enough. Doubtless the employment of mild cauterants has done much to impair confidence in the utility of this method of treatment and to bring it into disrepute, since these, acting as irritants rather than destructive agents, only tend to stimulate the growth of the neoplasm. It is not my purpose to consider in detail all the various agents which may be employed, but only to call attention to a few reliable ones which, for one reason or another, I believe best suited for the treatment of the affection under consideration.

One of the oldest and most efficient of the chemical caustics is arsenic; it is thorough in its action, and belongs among what may be termed selective caustics, by which is meant that it attacks the morbid much more rapidly than the healthy tissues. It is usually applied in the form of a paste, made by combining arsenous acid with powdered acacia and water in varying proportions. The employment of this agent is attended by two serious disadvantages,—the extreme pain which usually accompanies its action and the danger of toxic effects when applied to a considerable surface. When the growth is small, sufficient destruction may be produced by using a paste of moderate strength (1 to 8), allowing it to act for two to three days; a paste of this strength does not produce such intolerable pain as the stronger ones.

Chloride of zinc, which acts rapidly and which may be made to penetrate to almost any

depth desired, is one of the most reliable and thoroughly efficient agents of its class. It is particularly useful when the neoplasm is of considerable size and has invaded the deeper structures. It has the further advantage of rendering the blood-vessels impervious, so that hemorrhage does not occur, even when tissues containing vessels of considerable size are destroyed. There are many formulæ for its employment, but the paste made up with flour and water, twenty-five to fifty per cent. strength, known as Canquoin's paste, is a convenient and ready method of applying it. It produces a gray leathery eschar, which varies in thickness, according to the strength of the paste used. At the end of fifteen to eighteen hours its action ceases, owing largely to the impenetrability of the slough formed.

Potassium is a powerful and deeply penetrating caustic, destroying much more rapidly than either of the foregoing. Some care is necessary in using it, since, owing to its deliquescence, it is apt to spread much beyond the point to which it is applied. Because of the permeability of the slough produced by it, it penetrates deeply, and in order to prevent unexpectedly deep destruction of the tissues, its action should be neutralized by the application of vinegar or dilute acetic acid when the desired depth has been reached.

One of the very best remedies of this class is, on many accounts, pyrogallol, and it is especially indicated in the small superficial epitheliomata so commonly seen upon the face. Owing to the comparative slowness of its action, it is easy to regulate the amount of tissue destroyed, and, as it is almost or quite painless, few patients object to its employment; it produces far less inflammatory reaction in the surrounding parts than any of the caustics above mentioned. In using chloride of zinc and pyrogallol it should be remembered that the eschar, after it has attained a certain thickness, protects the tissues beneath it, and if it is desired to penetrate to a considerable depth, it is necessary to remove this eschar and reapply the caustic. This may readily be done in thirty-six to forty-eight hours by the application of lint kept wet with a saturated solution of boric acid.

In conclusion, I would urge the more frequent use of caustics in the earliest stages of epithelioma, since I believe that a large proportion of cases which would refuse any operative interference would readily submit to this form of treatment and with entirely satisfactory results.



FIVE CASES OF ACUTE NEPHRITIS IN CHILDREN, WITH SPECIAL REFERENCE TO Pilocarpine in the Treatment.

By G. W. LUECK, M.D., JUNEAU, WIS.

IT may be of interest to precede this report with a brief review of the experience of some authorities with pilocarpine in nephritis.

Lewis Smith, in his "Diseases of Children," sixth edition, says, "Given in moderate doses and with sufficient interval, pilocarpine has never in my practice had any deleterious effect. It is apparently the most useful and important diaphoretic for the disease which we possess."

Hirschfelder, quoted by the same author, after speaking of its beneficial action in relieving various forms of dropsy, adds, "In some morbid conditions of the kidney, however, jaborandi is the remedy *par excellence*, and particularly in the acute parenchymatous nephritis which frequently follows scarlatina. . . . This disease heals spontaneously if the danger that threatens life from reduction of the urine and from the effusion of fluid into the cavities of the body be averted. In this disease jaborandi works wonders."

Tyson, in the *International Clinics* for July, 1891, says, "Jaborandi and pilocarpine are the most useful and important diaphoretics in the Pharmacopœia. That their use is, however, attended with some danger is also conceded, while a depressing effect on the heart is one of the harmful effects; œdema of the lungs is undoubtedly the greatest danger. But that death in uræmic convulsions is also ushered in by œdema of the lungs where pilocarpine has not been administered is also to be remembered, and not every case of death with œdema of the lungs when pilocarpine has been given dare be ascribed to this drug. At the same time, in view of this danger, where perspiration can be promptly induced by the hot-air bath, it should be performed. Should it, however, be impossible to secure sweating in this manner, I do not hesitate to give pilocarpine hypodermically, and repeat in fifteen minutes if the desired effect does not follow. Extreme danger requires corresponding remedies, and some risks must be taken."

Osler gives his experience in the following words: "It is a drug to be used with care. I abandoned its employment for many years after having several cases of severe collapse. Latterly I have resumed its use, often with benefit."

Strümpel says, "Besides hot baths and packs, one diaphoretic remedy is to be especially con-

sidered in renal disease, and that is pilocarpine muriate. In general we prefer the hot bath to pilocarpine, and we try the latter only when the baths are contraindicated or do not exert any satisfactory action."

My personal experience with pilocarpine is limited to the following cases:

CASE I.—E. L., female, aged eleven. My attention was first called to this case November 22, 1891, the father stating that the child had not been feeling well for some time, and that for a few days previous to my visit her face had swollen. On close inquiry, it was found that a brother of the patient had been sick before her with sore throat and a rash, but it was not considered of enough importance to call a physician. He was simply kept out of school about a week. Then this patient complained of sore throat, but had no rash, and was not considered sick enough to remain out of school until œdema of the face showed itself. Considering this a history of mild attacks of scarlet fever, and the urine containing a large amount of albumin, with considerable œdema of the face and ankles, the diagnosis of scarlatinal nephritis was made. Treatment consisted of a calomel purge and pilocarpine muriate,  $\frac{1}{4}$  grain every three or four hours, absolute rest in bed, and strict milk diet. The urine gradually increased in quantity, the œdema diminished, and the patient was convalescent December 2.

CASE II.—E. B., male, aged seven; was called to this case May 9, 1892. The patient was found in a convulsion; no history of scarlet fever or sore throat; considerable œdema of face and ankles; urine highly albuminous. The convulsion passing off very soon after my arrival, a calomel purge was ordered, followed by pilocarpine,  $\frac{1}{4}$  grain every three or four hours. As in the preceding case, it very promptly diminished the œdema and increased the quantity of urine. Patient convalescent May 13.

CASE III.—P. B., male, aged nine; first seen November 18, 1893. This patient was found in a severe unilateral convulsion, this being the first intimation the parents had of his illness. The convulsion was speedily controlled by a hypodermic of morphine,  $\frac{1}{8}$  grain, and rectal injections of chloral and potassium bromide; urine highly albuminous. Calomel and pilocarpine were administered, as in the preceding cases. Patient was convalescent in a week. There was no history of scarlet fever or sore throat in this case, the parents being inclined to assign as a cause of the convulsion a punishment administered by a school-teacher on the previous day.

CASE IV.—H. K., male, aged five. This patient was brought to my office January 28, when the father gave the following history: The little fellow had not been feeling right for some time; had lost his appetite and strength. As is frequently the case, the parents thought the trouble of little consequence, administered household remedies, and allowed the child to accompany his older sister to school up to a few days before he was brought to me. On undressing him one night his father noticed that his ankles were swollen. No more attention was paid to this, however, until the face became oedematous, when I first saw him. Being unable to obtain a specimen of urine just then, the father was made acquainted with the serious condition of the child, and was ordered to have him put to bed immediately on their reaching home, and was asked to bring a specimen of urine as soon as one could be obtained. It was brought the same evening, and found to be loaded with albumin. A calomel purge was administered that night, and after it had operated,  $\frac{1}{10}$  grain of pilocarpine was to be given every three hours until diaphoresis or salivation was induced. The patient was then passing about eight to ten ounces of urine in the twenty-four hours. On the 31st the father informed me that the patient could not tolerate the medicine, as it nauseated him and seemed to quicken his heart, so that the impulse was perceptible on the patient's shirt. There had been very slight diaphoresis, but no salivation. The pilocarpine was then stopped and compound jalap powder given every four hours, in the hope that it would accomplish by watery evacuations what the pilocarpine would have done through the skin and salivary glands had the patient's heart allowed its administration. Milk was the only nourishment allowed, and for the continuous thirst the patient was allowed to drink freely of cream of tartar lemonade. The following evening (February 1) Dr. Sears saw the case in consultation. Not deeming it advisable to administer pilocarpine, on account of the condition of the heart, the temperature of the room was raised to 85° F., and the patient surrounded by hot-water bottles to try to induce an action of the skin, but with little success. The wet pack was also tried, but the patient objected to this and fought so strenuously that it was abandoned. He had a few slight attacks of partial eclampsia, which were promptly controlled by hypodermics of morphine,  $\frac{1}{16}$  grain. A few doses of half a drop of Croton oil were administered in cream, as the compound jalap powder had not acted satisfactorily. There were a few more watery

stools before morning, but the urine seemed to be almost entirely suppressed, except what little he voided when his bowels moved. The following day he received active compound cathartic triturations, with no better result. The treatment of hot-water bottles alternately with the active compound cathartic triturations was continued until the 17th, when death occurred. On the 5th uræmic amaurosis occurred, which lasted to the end.

CASE V.—W. M., aged five; came under observation June 28, 1894; has always been healthy; no previous disease or injury until present disease began.

*June 19.*—Patient first complained of a stiff neck, lost his appetite and strength; this was succeeded by extreme languor, the patient falling asleep in all positions and under all conditions. When first seen on the 28th of June the patient's face was extremely oedematous, skin hot and dry, pulse 90, temperature 99° F., tongue slightly coated, complete anorexia; complained of headache; no other pain or dizziness; bowels constipated; the mother stated that she was not sure as to whether they had moved in a week or not; on being requested to empty his bladder, the patient voided about six drachms of urine, which, on examination, showed albumin.

*Treatment.*—Calomel and sod. bicarb., 1 grain of each, every hour until five have been taken or until bowels have acted; after this pilocarpine muriate,  $\frac{1}{16}$  grain every three hours, until diaphoresis or salivation are induced; mother instructed to save the whole amount of urine for twenty-four hours; patient to be put to bed and kept there on strict milk diet; for the thirst is allowed to drink freely of cream of tartar lemonade; after this the record reads as follows:

*June 29.*—Pulse 90, temperature 99° F.; has had one stool; skin seems to be a little moist; has vomited considerable, perhaps from the effect of the calomel; pilocarpine continued, with the injunction to stop as soon as indicated.

*June 30.*—Pulse 120, temperature 102.5° F.; had one small stool at 4 P.M.; yesterday vomited twice; sweat very freely during night; quantity of urine about six ounces last twenty-four hours; pilocarpine continued; heart tonic and stimulant half a tablespoonful every four hours; hot poultice over region of the kidneys.

*July 1.*—Pulse 90, temperature 99° F.; very bright this morning; voided about ten ounces of urine in the last twenty-four hours; talks intelligently and takes an interest in his surroundings; mother stated that he had sweat

"fearfully" the previous afternoon and night; bowels moved once; treatment continued.

*July 2.*—Pulse 100, temperature 100.5° F.; just as bright; not near so thirsty; urine, about sixteen ounces; skin is moist; pilocarpine and nitro-glycerin compound continued; ordered another poultice.

*July 5.*—Patient continues to improve; cedema very much diminished; pilocarpine to be kept up every four hours; besides this, 5 to 6 minims tinctura ferri chloridi after meals; patient convalescent.

Pilocarpine must be our sheet-anchor in renal dropsy, especially in children. To advise the use of hot baths and packs in these cases is, at least in my experience, one thing, but to administer them is decidedly another. If our patient is a child from three to five years old there will certainly be a fight, and if we persist, more harm than good will be accomplished from the exhaustion following the struggle. In Case I. treatment was begun by infusion of digitalis and potassium acetate, but the patient could only take a few doses on account of the nauseating taste. As the record shows, pilocarpine very promptly accomplished the desired result. In Cases II., III., and V. no temporizing measures were tried, but pilocarpine was administered immediately, with the most satisfactory result.

If, in Case IV., the pilocarpine had been kept up or given hypodermically when the stomach refused to accept it, the patient would probably have had a better chance for his life.

In my experience, the treatment of acute nephritis with urgent symptoms in children resolves itself into,—

1. Absolute rest in bed.
2. The administration of pilocarpine and alkaline drink.
3. Aiding the action of pilocarpine by hot flaxseed and mustard poultices over region of the kidneys, if the patient will permit them, supporting the action of the heart by proper remedies.

After the urgent symptoms have been relieved, the patient must be treated according to indications; if anæmic, tinctura ferri chloridi must be given in full doses, etc.

#### STERESOL IN DIPHTHERIA.

Reviewing the therapeutic uses of steresol, PAUL CHÉRON (*La Tribune Médicale*, July 12, 1894) says that this substance is a solution of gum lac, benzoin, tincture of Tolu, and phenic acid, in alcohol, to which is added a little es-

sence of chamomile and sugar. Steresol is a brownish liquid having an agreeable odor. The drug has been proved to be a powerful bactericide. According to the observations of Berlioz and Aschkinazi, it has rendered a special service in the treatment of diphtheria. The remedy should be applied locally twice or three times a day, using in the intervals washings of carbolyzed water of the strength of one per cent. In L'Hôpital Trousseau, of one hundred and ninety-six cases treated with steresol alone, ninety-nine cases were cured, or about fifty per cent. For cases of simple diphtheria, the percentage of cure was eighty-one; for those cases complicated with croup, nineteen. In the statistics published by Aschkinazi there was a percentage of seventy-two in simple diphtheria and of forty-two in cases complicated with croup. On the whole, it seems that steresol is a useful remedy in the local treatment of the malady under consideration.

#### THE TREATMENT OF HEART-DISEASE.

H. HUCHARD (*La Tribune Médicale*, August 2, 1894) prescribes in the treatment of feeble heart a single dose of 1 milligramme ( $\frac{1}{80}$  grain) of crystallized digitalin for one day only, and is in the habit of administering systematically every fifteen or twenty days for several months, sometimes for a whole year, 30 to 40 drops of a solution of digitalin of the strength of 1 in 1000. This procedure is sometimes modified as follows: Every fifteen days, alternately, a dose of digitalin is given, and during three days four to six cachets of theobromine of .50 gramme ( $7\frac{1}{2}$  grains) each are administered. The author recommends also this formula:

Powder of digitalis,  
Powder of scammony,

Powder of squill, of each, 1 gramme (15 grains).

For twenty pills, four or five of which are administered during three or four days.

Huchard considers digitalis the remedy *par excellence* in feebleness of the heart in cardiac disease. Strophanthus calms the heart without strengthening it, and exercises but little influence on the urine. Sparteine is a tonic to the heart, but has no diuretic action. Caffeine and theobromine excite diuresis and may act favorably in feeble conditions. The author has also administered cactus grandiflorus, coronilla, and other similar remedies, but still holds that digitalis is the most marvellous weapon in the therapeutic arsenal. Without this powerful drug cardiac therapeutics does not exist.

# The Therapeutic Gazette

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## Leading Articles.

### ACETANILIDE FOR VOMITING.

**A**MONG the many uses to which acetanilide has been put, other than that of an anal-  
gesic, we desire to call attention to its employ-  
ment in the treatment of obstinate vomiting,  
particularly when that vomiting seems to be  
due chiefly to nervous disturbance or marked  
gastric irritability. In the treatment of the  
vomiting following operations, acetanilide is  
particularly useful, and the administration of  
2 grains every hour until 6 grains are taken  
will often prevent this unpleasant sequel of  
operative interference. We have used acetan-  
ilide for this purpose a number of times with  
very satisfactory results, our attention having  
first been called to it by Dr. Brown, of Sioux  
Falls, S. D., who told us that it was his custom  
in country practice to leave acetanilide with the  
nurse after the operation, with instructions to  
administer the drug should vomiting after re-  
covery from the anæsthetic be an annoying  
symptom.

Whether it is of value in the treatment of the  
vomiting of pregnancy we do not know, but we  
would suggest its further trial. Probably the  
best way to administer it is to place the pow-  
dered drug in a little brandy, and then to add  
to a spoon some ice which has been finely pul-  
verized. In this way we not only get the stim-  
ulating and antiemetic powers of the brandy,  
but we aid in the solution and therefore in the  
rapid absorption of the acetanilide. It is pos-  
sible that the drug exercises its antiemetic  
effects chiefly by its influence upon the stomach  
itself, but we are inclined to think that the  
benefit is derived not only from this, but also  
from its influence on the nervous system after  
it is absorbed.

### THE VALUE OF HYPODERMIC INJECTIONS OF MAGNESIUM SULPHATE AS A PURGATIVE.

**S**OME of the readers of the GAZETTE may  
remember that a paper was read before  
the Section on Therapeutics of the Pan-Ameri-  
can Congress a year ago, in which Drs. Rohe and  
Wade detailed the results of their administration  
of magnesium sulphate as a purgative by means  
of the hypodermic needle, but we have not no-  
ticed since that time any contribution to the  
literature of the subject which would indicate  
that the method was regarded with favor among  
any other members of the profession. In a re-  
cent number of the *Medical News*, Dr. Fincke,  
of Baltimore, who is attached to the Johns Hop-  
kins Hospital, has published a brief article, in  
which he throws considerable doubt upon the  
efficacy of this method of treatment. The re-  
sults which he reached were as follows:

After fifty injections there occurred in seven-  
teen hours nine bowel movements,—one in the  
first hour, one in the second hour, one in the  
third hour, one in the fifth hour, one in the  
sixth hour, three in the seventh hour, and one  
in the ninth hour.

Taking a limit of fourteen hours as before,  
out of eleven cases, we have eight in which the  
results were successful and two which responded  
in twenty hours, the character of the stools  
being appreciably altered. However, consid-  
ering the latter as negative, our ratio is: success,  
72.7 per cent.; failure, 27.3 per cent.

Now, comparing these results with those of  
the hypodermic administration, we have:

*Hypodermically*.—Success, 18 per cent.; fail-  
ure, 82 per cent.

*By the Mouth*.—Success, 72.7 per cent.;  
failure, 27.3 per cent.

Although we do not consider the number of hypodermic injections as conclusive, still, to us, the foregoing results cast considerable doubt upon the purgative property of magnesium sulphate exhibited hypodermically in small doses.

An additional fact to be remembered in regard to this matter is one which, so far as we know, has been ignored in its discussion up to this time. Every one recognizes the danger of injecting drugs directly into a vein when the hypodermic method is employed under ordinary circumstances. This danger is, however, very much greater when magnesium sulphate is employed, for while the chances of puncturing a vein are of course the same as when any other solution is in the syringe, yet introduction of magnesium sulphate into the circulation is always followed by the most serious results, and frequently by death.

#### THE VALUE OF CHLOROFORM IN INTERNAL MEDICINE.

WE are so apt to regard chloroform as a pure anæsthetic when taken by inhalation that many of us are wont to overlook its value as an internal medicament, and, as a result of this oversight, lose a valuable aid to treatment in many affections, some of which are apt to obstinately resist the ordinary remedial measures. One of the most important applications of chloroform is its internal use for the relief of pain either in the chest or abdomen, pain in the latter region yielding naturally more readily to its influence. Particularly is this the case where the pain is of a gripping character, either due to irritability of unstriated muscular tissue in the wall of the intestine or to the presence of irritating foods or large quantities of flatus. Under such circumstances 20 to 40 drops of the spirit of chloroform added to two tablespoonfuls of water and perhaps aided by 10 to 20 drops of the spirit of camphor is one of the very best prescriptions that we can give. Further than this, those of us who believe in the value of antiseptic medication will recognize the fact that chloroform, under the circumstances which we have named, not only relieves the pain, but acts as one of the most powerful antiseptics which can be taken internally with moderate impunity. It is a well-recognized fact in therapeutics that many volatile substances seem to exercise very considerable power in checking all forms of watery diarrhoea, and where pain in the abdomen is associated with liquid movements chloroform possesses a third scope for useful-

ness. Not only is it of value in the forms of pain which are due to direct irritation or inflammation in the abdomen, but it is also useful in those pains which are due to nervous disturbance, such, for example, as in ordinary neuralgia of the stomach or true gastralgia. In obstinate vomiting, 2 to 5 drops of pure chloroform in a little water, taken in teaspoonful doses, will often act advantageously, and when the vomiting is due to the ingestion of bad food, particularly food which has undergone some decomposition process, it is especially indicated. In the vomiting of pregnancy, with some practitioners, it is held to be the best remedy. Another very valuable application of chloroform is its employment externally in liniments in cases of muscular rheumatism for stiffness of the muscles due to strain or excessive exercise. Possessing, as it does, not only counter-irritant, but anæsthetic effects, its employment in this manner is most advantageous. Another use to which it is too rarely put is for the production of counter-irritation varying from slight reddening to actual blistering of the skin. Slight reddening is rapidly produced by applying a cloth saturated with chloroform to some portion of the skin so remote from the respiratory apparatus as to avoid inhalation in any large quantity, and the blisters may be formed by placing chloroform on the skin under a watch-glass, so that too rapid evaporation will not take place. For those who are unable to take opium in any combination for the relief of pain in any part of the body, a prescription composed of 30 drops of spirit of chloroform and 10 minims of the fluid extract of a good cannabis indica is a valuable prescription.

#### RHYTHMICAL TRACTION OF THE TONGUE IN THE TREATMENT OF ASPHYXIA.

LABORDE, more than two years ago, communicated to the Académie de Médecin the results obtained by rhythmical traction of the tongue in the treatment of those asphyxiated by submersion. A year later, in an elaborate paper explaining his method and its *modus operandi*, he urged that this method of respiration was the most efficient yet discovered, that it always succeeded in restoring life when Sylvester's method would have succeeded, and that it had repeatedly been efficacious when Sylvester's method had failed; therefore that it should always be the method of choice. He recommended it in the treatment of the as-

phyxia of the new-born, toxic asphyxia, spasmodic and tetanic asphyxia, asphyxia by strangulation, asphyxia following powerful electric shocks, that due to compression or concussion of the brain, and, in fact, to all cases in which death was threatened from failure of the respiratory function. Since this time there have been contributed by many observers hundreds of cases attesting the value of Laborde's method. In many of these direct insufflation, Sylvester's method, and all the other known methods of resuscitation were tried in vain. To those especially interested in the details of these cases, *La Tribune Médicale*, for two years past, will afford instructive reading. Not the least striking of the many reported cases is that of Coutelet, found in *L'Abeille Médicale*.

This physician, wishing to demonstrate to his class Laborde's exact method, took for his subject a girl just dead apparently of tubercular meningitis. The exact time after death is not definitely stated, Coutelet believing that it was not more than three or four minutes. Cadaveric lividity was marked, pupils dilated, the heart had ceased beating, the extremities were turning cold. The tongue was grasped, and was drawn upon at the rate of forty or fifty tractions per minute. In three minutes lividity had disappeared, in another minute inspiratory movements of the wings of the nose were noticed, shortly the heart began to beat, the radial pulse became perceptible, and in about six minutes respiratory movements were re-established. Five minutes later, although tractions were continued, the patient really died.

In *La Tribune Médicale* for July 5 of this year there is reported the case of a young woman, a would-be suicide, rescued after five minutes of submersion, and restored after six minutes of rhythmical traction.

The same journal of another date, under the heading "Physiological Treatment of Apparent Death," narrates the case of a child three and a half years old, suffering from laryngeal diphtheria. Symptoms became so urgent that tracheotomy was performed. Though this required but thirty seconds, the child was apparently dead. Its face was pale, the lips blue, there was no respiratory movement. The tongue was seized in a pair of forceps and rhythmical traction was applied without result for six minutes; then the child began to breathe again, and in a quarter of an hour was for a time out of danger and ultimately recovered.

Laborde has been so insistent in advocating his method, claiming it as the most efficacious and most powerful and most simple of all those

employed against death from respiratory failure, and, moreover, has backed up his arguments with so many striking cases, that his method, by order of the prefecture of police, is now printed and posted in the public places and ambulance posts of Paris, and is taught to those who have to do with first aids in emergency surgery.

Traction upon the tongue, Laborde holds, directly excites the diaphragm to its respiratory function, the sensory impulse being conveyed by the superior laryngeal, the terminal tracheal, and bronchial expansions of the pneumogastric, the glosso-pharyngeal, and lingual, thus exciting a reflex which is expended upon the motor respiratory nerves, particularly the phrenic.

Laborde's method is applied as follows:

The asphyxiated person is placed on his back, with the head low, the clothing is loosened about the neck, and the jaws are opened and kept open by a wedge passed between the molar teeth, a knife-handle, a cane end, any object of suitable size, serving for this purpose. The throat is freed of mucus by the finger or a handkerchief wrapped about the finger. The thumb and index finger are covered by one thickness of a handkerchief to prevent slipping, and then the tongue is seized as far back from the tip as possible. Fifteen times to the minute and at about equal intervals the tongue is pulled out sharply and the tension immediately relaxed. This traction must be so exerted that the whole body of the tongue is affected and not merely its point. At the time the first two or three tractions are made it is well to introduce the index finger of the other hand into the pharynx, as though an effort were made to induce vomiting.

These tractions should be kept up at least thirty minutes and may be continued an hour. When assistants are at hand this method should be re-enforced by mechanical artificial respiration, which, according to Mareschal, is best applied as follows: Two assistants place themselves on opposite sides of the patient's body and simultaneously make pressure, the first upon the sides of the chest concentrically, the second upon the epigastric region from below upward. This pressure is repeated fifteen times to the minute, being relaxed suddenly. The surgeon who is practising tractions on the tongue thus times his motions with those of the assistants who are pressing on the chest and abdomen. At the moment he exerts traction he counts *one*, when traction is relaxed he counts *two*. Pressure upon the chest and abdomen should be made at the moment the sur-

geon counts two, and should abruptly cease the moment he counts one. Furthermore, this method should be re-enforced by external heat and friction of the body.

Laborde's method commends itself because of its instant applicability, especially in cases of threatened asphyxia during ether or chloroform narcosis, and because, if reported cases are worth anything, they show that it succeeds where Sylvester's method has failed.

Every anæsthetizer has, or should have, a pair of flat-billed forceps with which to seize the tongue and draw it forward when respiration becomes obstructed or fails. This procedure is usually sufficient to re-establish normal breathing, not because, as is commonly believed, the epiglottis is drawn upward, thus freeing the larynx,—for Hare and Martin have shown that traction upon the tip of the tongue has no effect upon the position of the larynx,—but because a reflex is thus excited.

Outside of France, Laborde's method has been but little tried. It has apparently given such universal satisfaction to Frenchmen that it would seem well worth while for surgeons of other lands to either corroborate or disprove Laborde's claims.

## Reports on Therapeutic Progress.

### CREOSOTE IN TUBERCULOSIS.

PAUL CHÉRON (*La Tribune Médicale*, August 23, 1894) refers to J. Simon, who advises the association of creosote, iodoform, and salol in the treatment of tuberculosis, in the form of rectal injections. This formula is proposed for every 10 kilogrammes (22½ pounds) of the body-weight:

Pure beech-creosote, .40 gramme (7 minims);  
Iodoform, .005 gramme ( $\frac{1}{4}$  grain);  
Salol, .40 gramme (6 grains).

The above is to be dissolved in a sufficient quantity of pure olive oil to make 10 cubic centimetres (2.7 fluidrachms), and used for a daily rectal injection. The injections are said to be well borne. Out of thirteen cases of tuberculosis treated with this method by Simon, there were five notable ameliorations (the cases being in the second stage of the disorder), three remained stationary, three were made worse, and two of the patients died. It is stated, on the whole, that the results are negative in febrile cases and bad in those cases in which the disease runs a rapid course. The

medicament appears to be indicated only in afebrile cases.

### CHLORALOSE NOT EFFICIENT IN THE TREATMENT OF THE INSANE.

The failure of chloralose to do good in the treatment of the insane is recorded by E. MARANDON DE MONTYEL (*La France Médicale*, August 24, 1894). Nine cases of mental disease, characterized by visionary hallucinations, are described in detail, in which chloralose was tried as a therapeutic agent. The results were distinctly bad in eight of the cases, all of these being made worse. The author proposes to give the drug further trial, notwithstanding the fact that the effects of chloralose in the treatment of mental disease has been so far, according to his experience, decidedly discouraging.

### CORROSIVE SUBLIMATE IN THE TREATMENT OF DIPHTHERITIC ANGINA.

MOIZARD (*La Nouveaux Remèdes*, August 24, 1894) gives an account of his experience in the treatment of diphtheria by the local applications of corrosive sublimate in glycerin solutions of the strength varying from 1 in 20 to 1 in 30 or 1 in 40. The first solution is preferred for children over two years old, and the other two solutions for those below this age. The applications are made twice or three times a day by means of a brush, care being taken to prevent the remedy from being swallowed. The results are said to be most satisfactory. The treatment is continued for several days after the disappearance of the false membranes. In one hundred and twelve cases treated the author obtained a complete cure in eighty per cent., and refers to other practitioners giving a higher percentage with the same method. He asserts that the solutions indicated produce no caustic effects.

### THE TREATMENT OF SCARLATINA.

An interesting article is published by J. COMBY (*La Médecine Moderne*, August 22 and 25, 1894), from which we cull the following points. The author believes that of antipyretics the least noxious is quinine in the form of a suppository, to be used nightly. For a child five years of age this suppository should consist of the following:

Cacao butter, 2 grammes (30 grains);  
Quinine salt, .25 gramme (3¾ grains).

After quinine, antipyrin may be tried, in the form of cachets, solutions, or suppositories. The salicylates must be used with extreme caution, on account of the condition of the kidneys. When not especially contraindicated, this prescription may be employed :

Salicylic acid, 1 gramme (15 grains);  
Syrup of orange-peel, 50 grammes (1½ ounces);  
Warm distilled water, 200 grammes (6 ounces).

A dessertspoonful every hour, according to the age of the child.

Digitalis is of service not only as a heart tonic and diuretic, but also as an antithermic remedy, since it seems to act on the regulating heat-centres; it must be given in moderate doses. Water is one of the best antipyretics; it should be used in the form of baths, lotions, or by affusion. Cold baths, however, are contraindicated when there is a tendency to asphyxia or collapse. In these cases digitalis, caffeine, the diffusible stimulants, inhalations of oxygen, etc., are to be preferred. The following prescriptions are of service :

1. Tincture of digitalis, 15 drops;  
Syrup of squill, 15 grammes (½ ounce);  
Simple syrup, 45 grammes (1½ ounces);  
Lettuce water, 90 grammes (3 ounces).  
A tablespoonful every two hours.

2. Carbonate of ammonia, 1 gramme (15 grains);  
Peppermint water, 5 grammes (1½ fluidrachms);  
Lime water, 20 grammes (¾ ounce);  
Syrup, 15 grammes (½ ounce).  
From 4 to 6 dessertspoonfuls.

If there be excitement, a tendency to delirium, or ataxic symptoms, bromide of potassium, chloral, musk, and chloroform are indicated. This formula may be employed with advantage :

Hydrate of chloral, .50 gramme (7½ grains);  
Bromide of potassium, .50 gramme (7½ grains);  
Tincture of musk, 10 drops;  
Peppermint syrup,  
Distilled water, of each, 30 grammes (1 ounce).  
A tablespoonful every hour.

When the eruption is tardy, the following mixture appears to give satisfactory results :

Elder-flower water, 120 grammes (4 ounces);  
Spirit of Mindererus, 3 grammes (46 minims);  
Wine of antimony, 2 grammes (½ fluidrachm);  
Syrup of raspberry, 15 grammes (½ ounce).  
A tablespoonful every two hours.

The treatment of complications claims attention. Nephritis is the most frequent of such complications, giving rise to albuminuria, ana-

sarca, and convulsive phenomena. A milk diet is to be preferred when albuminuria is present, diaphoresis enhanced by warm water or hot vapor-baths, and the hypodermic use of pilocarpine. Half a syringeful or a syringeful (Pravaz) of a one- to two-per-cent. solution of the nitrate of pilocarpine is sufficient for an injection; this drug can also be given by the mouth. Diuretics, like acetate of potassium, and purgatives, like jalap and scammony, are likewise indicated in the treatment of albuminuria. For the nephritis proper, astringents, like tannic acid, are recommended. In anasarca, diuretin seems to have acted well, and may be given according to the following combination :

Diuretin, 1.50 grammes (22½ grains);  
Sugar, 2.50 grammes (37½ grains);  
Cognac, 10 drops;  
Distilled water, 100 grammes (3¼ ounces).  
A dessertspoonful every hour.

In such complications as gangrenous, diphtheritic, or phlegmonous angina, local applications of antiseptic remedies to the throat are indicated. Irrigations with solutions of salicylated water one per cent., carbolyzed water one per cent., or borated water three per cent. may also be used with advantage. In very young or unmanageable children, atomization with the following combination is advised :

Tincture of eucalyptus, 2 grammes (½ fluidrachm);  
Boric acid, 20 grammes (308 grains);  
Phenic acid, 4 grammes (61.6 grains);  
Salicylic acid, 1 gramme (15.4 grains);  
Glycerin, 30 grammes (1 ounce);  
Alcohol at 90° F., 50 grammes (1¾ ounces);  
Water, q. s. for 1 litre (1.76 pints).

For prurigo and urticaria, which may appear before, during the course, or at the end of the eruption, ointments of lanolin, vaseline, and tartaric acid are of service. The author does not believe that rheumatism, pleurisy, endocarditis, and pericarditis, occurring during an attack of scarlatina, require special treatment.

#### SUCCESSFUL TREATMENT OF CHOLERA INFANTUM BY A DIET OF WATER AND STERILIZED MILK.

JULES PARA (*Rev. Mens. des Malad. de l'Enfance*, September, 1894) records the details of five cases of choleriform enteritis in children, treated successfully by a diet of water and sterilized milk, as recommended by Luton and Remy. The author has made use of slightly mineral and gaseous waters, such as Soultzmatt



or Vals. The ingestion of water to the exclusion of all else soon caused the disappearance of the diarrhoea and of the vomiting, after which sterilized milk was ordered to be given. He believes that many cases of cholera infantum occurring in bottle-fed children are due to decomposed milk. He has abandoned the administration of bismuth preparations and lactic acid in the newly-born, since these medications seem to do good only in children over two years of age.

#### THE TREATMENT OF EPISTAXIS.

In an interesting article on the etiology and treatment of epistaxis, RIPAULT (*Gazet. Médicale de Paris*, June 9, 1894) formulates the following: Epistaxis is of common occurrence; it often is of an unquestionable clinical importance; its cause varies; it may be due to affections of the nasal fauces, the naso-pharynx, to some acute or chronic general disease, or to visceral disorders. The chief important point to consider is that regarding the nasal cavity, of which a thorough, careful physical examination should always be made by means of a speculum and mirror. It is only in this way that a correct diagnosis can be made, and thus proper treatment applied. Antiseptic plugging is generally sufficient, but this cannot be retained if the hemorrhage continue, or if, after stoppage, it should return. The best safeguard against this accident is galvanism. In regard to other therapeutic measures, these are varied according to the individual cases, but the treatment should always be rational.

#### TURPENTINE VAPORS AND THE ELIMINATION OF URIC ACID.

BENOIT DU MARTOURET (*Lyon Médical*, June 17, 1894) gives the details of two cases,—one of arthritism accompanied with right crural neuritis and cardiac arterio-sclerosis, and the other of pyelo-nephritis of calculous origin, in both of which dry turpentine vapor-baths produced satisfactory results, by distinctly increasing the elimination of uric acid. For these baths the fresh resin of the *pin mugho* was used. In view of the results obtained, the author suggests that cases of pyelo-nephritis, due to the presence of calculi, might be cured by the treatment alluded to. This will in time so reduce the size of the calculus that it may with ease be voided through the natural passages.

#### LOCAL THERAPEUTICS IN DISEASES OF THE SKIN.

CATHELINEAU (*Gaz. Médicale de Paris*, July 21 and 28, 1894) writes an interesting article on the local therapeutics employed at L'Hôpital Saint-Louis, of Paris, in the treatment of skin-diseases. We copy many of the combinations given for the benefit not only of our medical, but also of our pharmaceutical readers.

*Salves.*—Some of these are made in the following proportions: oxide of zinc, ten per cent.; turpeth-mineral, five per cent.; calomel, two per cent.; sulphur, five per cent.; boric acid, five per cent.; iodide of potassium, ten per cent.; iodine, two per cent.; tar, ten per cent. Helmerich's salve is composed of these ingredients:

Sulphur, 10 grammes (154 grains);  
Potassium carbonate, 5 grammes (77 grains);  
Water, 5 grammes (80 minims);  
Oil of sweet almonds, 5 grammes (80 minims);  
Petrolatum, 35 grammes (539 grains).

In all the above mixtures the vehicle is either lard, vaseline, or lanolin, or a combination of lard and lanolin, or of vaseline and lanolin, with the addition of white wax.

*Ointment.*—The following ointment is much used:

Liquid styrax, 200 grammes (1540 grains);  
Calophony (black resin), 180 grammes (2772 grains);  
Elemi resin, 100 grammes (1540 grains);  
Yellow wax, 100 grammes (1540 grains);  
Olive oil, 150 grammes (2310 grains).

*Pastes.*—The combinations that follow are used for the preparation of pastes.

##### (a) Salicylated pastes:

1. Oxide of zinc, 50 grammes (770 grains);  
Salicylic acid, 2 grammes (30.8 grains);  
Rice starch, 15 grammes (231 grains);  
Glycerin, 15 grammes (231 grains);  
Distilled water, 75 grammes (1155 grains).  
Mix and boil down to 140 grammes (2156 grains).

2. Salicylic acid, 2 grammes (30.8 grains);  
Oxide of zinc, 25 grammes (385 grains);  
Powdered starch, 25 grammes (385 grains);  
Vaseline, 50 grammes (770 grains).

In this latter mixture the vaseline may be substituted by 5 grammes (77 grains) of vaseline and 35 grammes (539 grains) of lanolin, or by equal parts of vaseline and lanolin.

##### (b) Dextrin paste:

Oxide of zinc, 40 grammes (616 grains);  
Dextrin, 20 grammes (308 grains);  
Distilled water, 20 grammes (308 grains);  
Glycerin, 40 grammes (616 grains);  
Sulphur or sulphoichthyolate of sodium, 2 grammes (30.8 grains).  
Mix and boil to proper consistency.

**(c) Gum paste :**

Oxide of zinc, 40 grammes (616 grains);  
 Red precipitate, 2 grammes (30.8 grains);  
 Mucilage of gum arabic, 20 grammes (308 grains);  
 Glycerin, 20 grammes (308 grains).

**(d) Lead pastes :**

1. Finely powdered litharge, 50 grammes (770 grains);  
 Vinegar, 80 grammes (1232 grains).  
 Mix and boil to the consistency of paste, and then add 10 grammes (160 minims) of linseed or glycerin.

2. Litharge, 30 grammes (462 grains);  
 Vinegar, 50 grammes (770 grains).  
 Mix and reduce by boiling, and then add 15 grammes (231 grains) each of dextrin, water, and glycerin; again boil to the consistency of paste.

**Soaps.**—The *fundamental* soft soap, so termed, is composed of the following ingredients :

Beef suet, first quality, 59.03 grammes (909 grains);  
 Olive oil, 7.04 grammes (108 grains);  
 Soda lye at 38° Baumé, 22.02 grammes (339 grains);  
 Potassa lye at 38° Baumé, 11.01 grammes (169.5 grains).

To this soap are incorporated several substances, as follows :

**(a) Resorcin-salicylated soap :**

Soap, 84 grammes (1303 grains);  
 Salicylic acid, 3 grammes (46.2 grains);  
 Resorcin, 3 grammes (46.2 grains);  
 Precipitated sulphur, 10 grammes (154 grains).

**(b) Sulphur salicylo-resorcinated soap :**

Soap, 79 grammes (1214 grains);  
 Salicylic acid, 3 grammes (46.2 grains);  
 Resorcin, 3 grammes (46.2 grains);  
 Precipitated sulphur, 10 grammes (154 grains);  
 Tar, 5 grammes (77 grains).

**(c) Iodated soap :**

Soap, 95.05 grammes (1463.7 grains);  
 Iodine, 3 grammes (46.2 grains);  
 Iodide of potassium, 1.05 grammes (16.1 grains).

**(d) Salicylo-creosotated soap :**

Soap, 93 grammes (1432.2 grains);  
 Salicylic acid, 5 grammes (77 grains);  
 Creosote, 2 grammes (30.8 grains).

**Plasters.**—Two fundamental plasters are used for the incorporation of various substances, and they are made as follows :

**(a) Simple plaster :**

Powdered litharge, 1000 grammes (15,400 grains);  
 Lard, 1000 grammes (15,400 grains);  
 Olive oil, 1000 grammes (15,400 grains);  
 Water, 2000 grammes (30,800 grains).

**(b) Diachylon plaster contains in addition :**

White wax, 120 grammes (1858 grains);  
 White pitch, 120 grammes (1858 grains);  
 Larch-tree turpentine, 120 grammes (1858 grains);  
 Gum ammoniac, 100 grammes (1540 grains);  
 Galbanum, 100 grammes (1540 grains);  
 Essence of turpentine, 60 grammes (924 grains).

The simple plaster is non-irritant, but little adhesive. On the other hand, the diachylon plaster is very adhesive, but exerts a decided irritant action, which should be borne in mind when treating acute or subacute inflammations, especially in susceptible subjects. Again, not all substances can be incorporated into these plasters, and it must not be forgotten that pyrogalllic acid, sulphur, anthrarobin, and chrysophanic acid decompose lead salts. The following medicated plasters have been found of service :

**(a) Red plaster :**

Simple plaster, 520 grammes (8008 grains);  
 Minium, 50 grammes (770 grains);  
 Cinnabar, 50 grammes (770 grains).

**(b) Calomel plaster :**

Simple plaster, 300 grammes (4620 grains);  
 Calomel, 100 grammes (1540 grains);  
 Castor oil, 30 grammes (462 grains).

**(c) Oil of chaulmoogra plaster :**

Simple plaster, 400 grammes (6160 grains);  
 Oil of chaulmoogra, 300 grammes (4620 grains);  
 Yellow wax, 100 grammes (1540 grains).

**(d) Cod-liver oil plaster :**

Simple plaster, 300 grammes (4620 grains);  
 Cod-liver oil, 175 grammes (2695 grains);  
 Yellow wax, 125 grammes (1925 grains).

**Glues.**—The base glue is prepared by dissolving commercial gelatin in twice its weight of water, by means of a water-bath. Two medicated glues are used,—the soft and the hard.

**(a) Soft glue :**

Gelatin, 15 grammes (231 grains);  
 Glycerin, 25 grammes (385 grains);  
 Water, 15 grammes (231 grains);  
 Oxide of zinc, 15 grammes (231 grains).

**(b) Hard glue :**

Gelatin, 30 grammes (462 grains);  
 Glycerin, 30 grammes (462 grains);  
 Water, 30 grammes (462 grains);  
 Oxide of zinc, 10 grammes (154 grains).

The soft glue forms a good base for insoluble substances, such as white lead, iodide of lead, white precipitate, etc., in the proportion of from five to thirty per cent. The hard glue is preferred for chloral, camphor, creosote, and ichthyol; but it is impracticable for tannin,

pyrogallie acid, and the salts of mercury, since these substances form with gelatin an insoluble compound. The employment of glues is contraindicated in warm weather or whenever sweating is excessive.

*Epidermine*.—15 grammes (231 grains) each of white wax and powdered gum arabic are well triturated into a homogeneous mass. To this is added a boiling mixture of 15 grammes (231 grains) each of water and glycerin, and agitated until cooled. To this substance the name of *epidermine* has been given. For mixing medicinal agents with epidermine, glycerin should be exclusively used. The following substances make good combinations with epidermine: oxide of zinc, from five to thirty per cent.; turmenol, ten per cent.; chrysarobin, ten per cent.; pyrogallie acid, five to ten per cent.; beech-tar, ten per cent.; resorcin, two per cent.; iodoform, ten to twenty per cent.; corrosive sublimate, one per cent.; ichthyol, ten per cent.; and iodide of lead, ten to thirty per cent.

*Steresol*.—This is considered the best of medical varnishes proposed. It is made according to this combination:

Gum lac, purified, 270 grammes (4158 grains);  
Benzoin, 10 grammes (154 grains);  
Balsam of Tolu, 10 grammes (154 grains);  
Crystallized phenic acid, 180 grammes (2772 grains);  
Essence of cinnamon, 6 grammes (92.4 grains);  
Saccharin, 6 grammes (92.4 grains);  
Pure alcohol, sufficient to make 1 litre (1.76 pints).

*Lotions*.—The following lotions are recommended:

(a) Sulphur lotion:

Sulphur, 50 grammes (770 grains);  
Camphorated alcohol, 120 grammes (1848 grains);  
Water, 880 grammes (13,552 grains).

(b) Stimulating lotions:

1. Camphorated alcohol, 100 grammes (1540 grains);  
Essence of turpentine, 15 grammes (231 grains);  
Ammonia, 5 grammes (77 grains).
2. Camphorated alcohol, 100 grammes (1540 grains);  
Essence of turpentine, 25 grammes (385 grains);  
Ammonia, 15 grammes (231 grains).

(c) Parasitic lotion:

Camphorated alcohol, 4200 grammes (84,680 grains);  
Glycerin, 1000 grammes (15,400 grains);  
Essence of turpentine, 800 grammes (12,320 grains);  
Corrosive sublimate, 6 grammes (92.4 grains).

*Emulsions*.—The most common in use appear to be those of coal-tar, oil of cade, and tar. The following are the combinations:

1. Tincture of Panama wood, 400 grammes (6160 grains);  
Coal-tar, 100 grammes (1540 grains);  
Water, 400 grammes (6160 grains).
2. Oil of cade, 20 grammes (308 grains);  
Alcohol at 90° F., 100 grammes (1540 grains);  
Tincture of Panama wood, 100 grammes (1540 grains);  
Warm water, 780 grammes (12,012 grains).
3. Tar, 20 grammes (308 grains);  
Alcohol at 90° F., 100 grammes (1540 grains);  
Tincture of Panama wood, 100 grammes (1540 grains);  
Warm water, 780 grammes (12,012 grains).

THE PHYSIOLOGICAL ACTION AND THERAPEUTIC USES OF CUPREINE, QUINETHYLINE, AND QUINO-PROPYLINE.

E. GRIMAUX (*La Nouveaux Remèdes*, July 8, 1894) publishes the results obtained in an experimental study of the above substances, homologues of quinine.

CUPREINE.

*Physiological Action*.—Subcutaneously administered, this drug produced in dogs, rabbits, and guinea-pigs a local anæsthesia at the point of injection, this effect lasting for several days, but no tremors or any other convulsive phenomena were observed. For guinea-pigs, the fatal dose varied from 250 to 300 grammes (3850 to 4620 grains), or double that of quinine.

*Therapeutic Uses*.—The chlorhydrate of cupreine was used in simple malarial fever, in doses of from .50 to 1 gramme (7½ to 15 grains); but its antiperiodic action was weak, as were also its hypothermic effects. It caused no vertigo nor buzzing in the ears.

QUINETHYLINE.

*Physiological Action*.—The phenomena produced by this medicament are the same as those caused by quinine, but more marked: analgesia, especially of the leg experimented upon, stupor, bilateral tremors, depression of the temperature from 1.8° to 3.6° F. A dose of .15 gramme (2.3 grains) caused death in a guinea-pig weighing 400 grammes (6160 grains).

*Therapeutic Uses*.—In the form of the basic sulphate this drug was found to be an excellent antiperiodic, in doses of from .50 to .75 gramme (7½ to 11¼ grains). It gave satisfactory results in cases in which quinine had failed. In doses of .75 gramme (11¼ grains) quinethyline cured in three days a case of fever that was not even relieved by four .80-gramme (12.3 grains) doses of quinine sulphate. In another febrile

case, complicated with meningitis, in which quinine had been of no avail, quinethyline effected a cure after four doses of .50 gramme ( $7\frac{1}{2}$  grains) each. This drug was also found superior to quinine as an antiperiodic.

#### QUINOPROPYLINE.

*Physiological Action.*—The action of this remedy was quite decided. In doses of .025 gramme ( $\frac{3}{8}$  grain) it produced in a guinea-pig weighing 400 grammes (6160 grains) a lowering of the temperature of  $2^{\circ}$  C. ( $3.6^{\circ}$  F.) in fifteen minutes, and of  $5^{\circ}$  C. ( $9^{\circ}$  F.) in the course of two hours. This thermic depression was accompanied with bilateral tremors, inco-ordination of movements, collapse, stupor, and somnolence. A few days afterwards the same animal succumbed to a dose of .05 gramme ( $\frac{3}{4}$  grain), death being preceded by epileptiform convulsions and all the phenomena of asphyxia. Quinopropyline is probably about four times as poisonous as quinine.

*Therapeutic Uses.*—This medicament (quinopropyline) possesses also powerful antipyretic and antiperiodic virtues. As an antipyretic especially, quinopropyline produced excellent results in the treatment of a case of typhoid fever. It was given in doses of .50 gramme ( $7\frac{1}{2}$  grains) from the third to the eighth day of the disorder, causing a gradual fall of the bodily temperature from  $40.3^{\circ}$  to  $37.4^{\circ}$  C. The action of the agent is decided, and single doses of .50 gramme ( $7\frac{1}{2}$  grains) almost always produced buzzing in the ears, vertigo, nausea, and general malaise.

From the above study, the author concludes that quinethyline is superior to quinine as an antiperiodic, that it can be used with advantage where the latter drug fails to act, and that quinopropyline may be employed as a powerful antipyretic in continued fevers.

#### METALLIC IODINE IN THE TREATMENT OF TUBERCULOSIS.

CADIER and L. JOLLY (*Journ. de Médecine de Paris*, June 17, 1894) report their further experience in the treatment of tuberculosis by metallic iodine associated with the phosphate of iron and the glycerophosphate of potassium. The first combination was given in wine, each spoonful of which contained 10 centigrammes (1.5 grains) of glycerophosphate of potassium and 25 milligrammes ( $\frac{3}{8}$  grain) of iodine. The second combination was administered in the form of pills, each one of which contained 25 milligrammes ( $\frac{3}{8}$  grain) of iodine and 4 milligrammes ( $\frac{1}{8}$  grain)

of iron phosphate. The first week only two spoonfuls of the wine were allowed, and during the second week two spoonfuls of wine and two of the pills, to make up 4 spoonfuls of wine and 12 pills a day, representing in all 40 centigrammes (6.1 grains) each of iodine and glycerophosphate of potassium, and 5 centigrammes ( $\frac{1}{8}$  grain) of iron phosphate. These quantities never caused noxious effects, not even in patients who had previously suffered from hemorrhage. The number of cases observed was twenty-six during a period of from three months to two and a half years. During the first months there occurred an appreciable amelioration of the local lesions in the larynx as well as in the lungs. In from five to six weeks of treatment the appetite was considerably increased and the patients felt stronger. After from four to five months the amelioration of the local lesions was rapid and marked and the weight of the patients increased. During a period of from ten months to two and a half years there was a progressive and simultaneous amelioration of the local lesions and the general condition of the patients. The râles diminished gradually and the general health was much improved. Three of the patients resumed their usual work, and, notwithstanding the inevitable attack of grippe of that winter, no new untoward phenomena were observed on either larynx or lungs.

#### SPARTEINE IN CHLOROFORMIZATION.

In an interesting communication to the Société de Biologie, P. LANGLOIS and MAURAUGE (*La Nouveaux Remèdes*, August 8, 1894) call attention to the fact that sparteine, associated with morphine, is a powerful stimulant to the heart during chloroformization. The authors first experimented upon rabbits and dogs. Chloroform was administered to these animals while under the influence of sparteine, and although the anæsthetic caused an arrest of respiration, the heart, disturbed at first, rapidly resumed its normal rhythm. On the sparteinized dog, the arterial pressure remained high even during a profound chloroform narcosis. Sparteine was then tried in the human being. A dose of from 3 to 4 centigrammes ( $\frac{1}{2}$  to  $\frac{3}{4}$  grain), associated with 1 centigramme ( $\frac{1}{6}$  grain) of morphine, was injected hypodermically fifteen minutes before the administration of chloroform in various long surgical operations like laparotomy, hernia, etc. In one hundred and twenty observations made, the heart continued to act strongly and in a perfectly regular manner during the chloroform narcosis.

**DANGERS OF INTERNAL ANTISEPTIC MEDICATION.**

P. DIGNAT (*Journ. de Médecine de Paris*, July 1, 1894), in a timely article, writes of the dangers accruing from the internal administration of antiseptic remedies. He describes in detail two cases in which the ingestion, respectively, of salol and guaiacol, in comparatively feeble doses, produced a series of untoward symptoms. After a careful observation and study, these symptoms could only be ascribed to the action of the remedies alluded to. The author believes that antiseptic internal medication renders good service, but insists that the fact that such medication is apt to do more harm than good in many instances should not be lost sight of in modern therapeutics.

**THE DIURETIC ACTION OF CALOMEL.**

SKŁODOWSKY (*Deutsch. Archiv f. Klin. Med.*, 52, 1894; *Journ. de Médecine de Paris*, July 8, 1894) affirms that as a diuretic calomel acts in renal disease better than in cardiac troubles. In seven out of fourteen cases of well-defined Bright's disease, accompanied with œdema, calomel was found superior to all other diuretics recommended to-day. In summing up his experience, the author believes that calomel acts as a powerful diuretic, facilitating the disappearance of œdema in kidney-disease, with the important advantage that the drug does not produce noxious effects at all on the renal tissue. He believes that calomel ought to be tried where other diuretics have failed to act.

**THE TREATMENT OF CYSTITIS IN THE FEMALE.**

The treatment of acute and chronic cystitis in the female is clearly dealt with by A. LUTAUD (*Journ. de Médecine de Paris*, July 22, 1894).

*Acute Cystitis.*—In this form the first indication is to combat pain. The author recommends the following suppository:

Morphine hydrochlorate,  
Cocaine hydrochlorate, of each, .01 gramme ( $\frac{1}{10}$  grain);  
Extract of belladonna, .005 gramme ( $\frac{1}{40}$  grain);  
Cacao butter, 3 grammes (46 grains).

This suppository is introduced every four hours, until the pain and tenesmus ceases. For insomnia this rectal injection is advised:

Chloral hydrate, 4 grammes (60 grains);  
The yolk of an egg;  
Water or milk, 150 grammes ( $4\frac{3}{4}$  fluidrachms).

For general treatment, hot fomentations, poultices, and sitz-baths are recommended, as is also the introduction into the vagina, morning and evening, of the following tampon:

Camphorated lanolin, 30 grammes (462 grains);  
Extract of belladonna, 2 grammes (30 grains).

*Chronic Cystitis.*—When the pain and inflammation have subsided, an elastic or glass catheter, to which is attached a syringe holding 100 to 150 grammes ( $3\frac{1}{4}$  to  $4\frac{3}{4}$  ounces), is introduced into the bladder and the following injection put in:

Boric acid, 40 grammes ( $1\frac{1}{4}$  ounces);  
Biborate of sodium, 5 grammes ( $1\frac{1}{4}$  fluidrachms);  
Distilled water, 1 litre (1.76 pints).

Of this solution from 30 to 50 grammes (1 to  $1\frac{1}{2}$  ounces), according to the irritability of the bladder, are injected. This is followed by the injection of 150 grammes ( $4\frac{3}{4}$  ounces) of warm water holding in solution the following mixture:

Powdered iodoform, 30 grammes (462 grains);  
Glycerin, 40 grammes ( $1\frac{1}{4}$  ounces);  
Distilled water, 20 grammes (5 fluidrachms);  
Gum tragacanth, .25 gramme (4 grains).

Buchu and pichi are of service in the general treatment, and if pus exists in the urine, the following prescription is advised:

Benzoic acid, 1 gramme (16 grains);  
Orange-flower water, 50 grammes ( $1\frac{1}{2}$  ounces);  
Boiled water, 900 grammes (30 ounces);  
Sugar, 100 grammes ( $3\frac{3}{4}$  ounces).  
Of this a glassful is to be taken between meals.

Of course, the treatment must be modified according to individual cases.

**THE TREATMENT OF ICTERUS DUE TO RETENTION.**

Continuing his observations on the above subject, DUJARDIN-BEAUMETZ (*Bull. Génér. de Thérapeutique*, May 15, 1894) believes in treating such cases by thorough intestinal antiseptic measures. Of the drugs used for the purpose, such as salol, benzonaphthol, and the salicylates, the author favors the salicylate of bismuth, and he considers asaprol even superior to the latter remedy. A medicament that has rendered good service is calomel, which, according to the writer's experience, acts as a purgative and antiseptic at the same time. Care should be taken, however, in administering it for a long time, lest ptialism is produced. The author insists that bismuth salicylate and asaprol, and particularly laxatives

and a hygienic alimentation, constitute the best treatment for icterus due to retention. Among the laxatives mention is made of podophyllin, cascara, and cascarrine. Of mineral waters, those of Rubinat, Carabana, and Villacabras, in Spain, are recommended. Carlsbad salts are also spoken of as of service in the malady under consideration, being said to cause liquid stools without determining colicky pains or intestinal congestions. Diet must be mainly of a vegetable nature. When the gastric disturbance is marked, the ingestion of diastase is of advantage, and this should be given preferably after meals. Lastly, Vichy and Carlsbad waters are thought to exercise a curative action, by influencing the activity of the liver and causing an amelioration of the nutrition in general.

#### PILOCARPINE IN MÉNIÈRE'S DISEASE.

Three cases of Ménière's disease are reported by LABIT (*Rev. de Laryng., d'Otolog., et de Rhinologie*, September 1, 1894), in which the hypodermic use of pilocarpine gave satisfactory results. In one of the cases the hearing was improved only; in the other two, typical cases of the disease (one a fireman and the other a cook, in both of whom the heat to which they had been subjected brought about a congestion and a final hemorrhage into the labyrinth), the good effects of the drug were unmistakably manifest, as shown by a careful functional examination of the ear before and after treatment. The author believes that of all the treatments employed in Ménière's disease, such as the ingestion of the sulphate of quinine, iodide of potassium, the application of electricity, etc., that of the subcutaneous injections of pilocarpine is one of the most rational. The disorder is caused in the majority of cases by a sudden hemorrhage into the labyrinth, producing directly irritation or compression of the peripheral terminations of the acoustic nerve and of those of the semicircular canals. Since it is a well-established fact that pilocarpine, employed hypodermically, renders good service in pleuritic and peritoneal effusions, as well as in general exudations, it is reasonable to suppose that a similar action of the drug is exercised in like affections of the middle ear. The results obtained in the three cases reported seem to bear out this belief. The medicament was given in daily doses of from  $\frac{1}{4}$  centigramme ( $\frac{1}{24}$  grain) to  $1\frac{1}{2}$  centigrammes ( $\frac{1}{4}$  grain), and even as high as 2 centigrammes ( $\frac{1}{3}$  grain). These injections were generally followed by sialorrhoea and profuse diaphoresis.

#### CRUDE PETROLEUM IN PULMONARY TUBERCULOSIS.

In a communication to the *Bull. Génér. de Thérapeutique* of May 15, 1894, PELLISSIER, of Roumania, affirms that he has used crude petroleum from the vicinity of Campina, Roumania, in the treatment of pulmonary tuberculosis, with asserted good effect. In fact, he gives the drug to all his tuberculous patients, almost as a routine practice. He administers it in capsules, as it is obtained from the well, after subjecting the remedy to a simple filtration through filtering-paper. The patients are also made to inhale the air charged with the vapors of the drug, as met with in the wells, by means of a simple apparatus resembling a long Turkish tobacco-pipe. The results are said to be most satisfactory: the cough stops, appetite and sleep return, and the pulmonary lesions are cured, without any gastric disturbances being produced. The breath of the patients thus treated acquires the odor of the petroleum. The author has tried the same substance by rectal injections, but believes that the absorption is incomplete.

#### TREATMENT OF DIPHTHERIA.

DR. JULIUS RITTER (*Therapeutische Monatshefte*, July, 1894) first discusses immunized serum in the treatment of diphtheria. In 1890 he rendered animals immune to diphtheria by graduated injections of weakened cultures, and then successfully employed serum from these animals to protect guinea-pigs and rabbits. A large dog was by degrees rendered so immune that it received without decided reaction a quart of a virulent culture. Two weeks later its serum was so strong that eight cubic centimetres of it protected guinea-pigs of about five hundred grammes' weight from infection with virulent cultures of diphtheria bacilli; its immunizing value was, therefore, as 1 to 62,500. Yet this serum failed to protect a child which had been exposed to diphtheria, the child dying ten days after injection and on the fifth day of the disease. Of twenty-six children who received local treatment and the protective injections, twenty-one recovered, two of these after tracheotomy. It then seemed desirable to employ human serum. An opportunity was afforded by the abortion of a woman three weeks after an attack of diphtheria. After sterilizing the birth-passages, Ritter obtained a quart of blood, from which he prepared serum. In guinea-pigs the serum had a protective value of 1 to 80,000. It was employed in the case of six children with beginning laryngeal involve-

ment; but, in spite of it, tracheotomy was necessary in four cases, and two died.

Ritter seems to think that in diphtheria we have to do with a mixed infection, and that the great liability of some persons to repeated attacks—he has attended one child four times in four years—is against the lasting value of the serum treatment.

Assuming that the serum treatment has not fulfilled expectations, he asks what remedies should be used. All those which possess anti-septic without toxic properties. He recommends that the initial focus of the disease, in the shape of a tonsillar plaque, should be scraped off. He would employ anæsthesia if it seemed necessary. The surface from which the membrane has been torn is then touched with a one-per-cent. cyanide of mercury solution. In some cases this has to be continued, with expression and squeezing of the tonsils, so that no concealed focus may be overlooked. The posterior pharyngeal wall should also be closely inspected. If no more membrane can be discovered, the raw surfaces should be painted with impure oil of turpentine. Subsequently the remaining spores are destroyed by daily repeated painting with oil of turpentine and spraying with one-per-cent. cyanide of mercury solution. Sixty-two patients so treated, who presented membrane in the pharynx without secondary affections, were all, under this treatment, in a short time freed from all their disease symptoms. Thirty-three patients who presented themselves early have never shown post-diphtheritic palsies. The existence of diphtheria was in each case established by bacteriological examination.

The majority of local remedies in diphtheria are inactive, including chlorate of potassium and one- and two-per-cent. solutions of carbolic acid. Papayotin dissolves the membrane, but has no effect on the bacilli.

Cases of diphtheria complicated with streptococcus invasion are best treated with crude turpentine oil locally and large doses of alcohol internally.

#### THE TREATMENT OF ACUTE PLEURISY.

In a critical review of the subject stated above, DUJARDIN-BEAUMETZ (*Bull. Génér. de Thérapeutique*, August 15, 1894) points out those parts of the treatment in which the profession appears to be in accord, and these are: general bloodletting; wet cupping, as an efficient means of diminishing pain in the early stages of the disease; and thoracocentesis, although practitioners differ somewhat as regards

the quantity of liquid to be extracted at one time. The widest divergence of professional opinion, however, exists with reference to the administration of internal medication and the application of revulsive measures. As to the first, for instance, some practitioners recommend the use of the salicylate of sodium and salol, while others totally condemn such therapeutics; the same may be said in regard to blistering. Thoracocentesis is admitted by all as a proper means to employ, especially in cases where the pleuritic effusion is considerable, causing displacement of the heart, dyspnoea, and even threatening the patient with sudden death. The author favors thoracocentesis, but insists that a proper medical treatment, unless it be in urgent cases, should always precede surgical interference. Without referring to internal medication, in which he has but little faith in these cases, he believes in revulsive measures, and considers blistering the best mode of applying such measures. The local applications of tincture of iodine and of the recently introduced remedy, guaiacol, which has the peculiar property of reducing the bodily temperature when thus used, should be considered as of secondary importance in the treatment of uncomplicated cases of acute pleurisy. A similar treatment is advised for chronic cases in which adhesions have already been established. In this kind of revulsion, the author upholds the views entertained by Galippe regarding cantharides and cantharidine, believing these remedies to exercise a decided influence over inflammatory phenomena. The treatment, as indicated, may be modified, however, to suit individual cases. For instance, in diaphragmatic pleurisies, in which dyspnoeic disturbances and pain are most marked, the subcutaneous administration of morphine is indicated, producing good results, although the drug does not directly affect the march of the disease.

#### INFILTRATION ANÆSTHESIA.

DR. C. L. SCHLEICH (*Thérapeutische Monatshefte*, September, 1894) writes upon a method of inducing local anæsthesia by over-distending the tissues with fluids. The injections are in sufficient volume to supersaturate the tissues, render them oedematous, and induce anæsthesia by interference with nerve conduction.

His solutions are as follows:

I. Solutions for very hyperæsthetic areas,—inflammation, suppuration, neuralgic parts:

1. Cocainæ hydrochlor., .2,  
Morph. hydrochlor., .025;  
Sodii chlor. steril., .2;  
Aq. dest. (steril.), q. s. ad 100;  
Adde acidum carbol. (five per cent.), gtt. ii. M.  
Sig.—Strong solution for infiltration anæsthesia.

Or,

2. Cocainæ hydrochlor., .1;  
Codeinæ phosph., .06;  
Sodii chlor. sterilizat., .6;  
Aq. dest. (sterilizat.), q. s. ad 100;  
Adde acidum carbol. (five per cent.), gtt. ii. M.  
Sig.—Strong solution for infiltration anæsthesia.

## II. Solutions for moderately hyperæsthetic areas; normal solution:

1. Cocainæ hydrochlor., .1;  
Morph. hydrochlor., .025;  
Sodii chlor. sterilizat., .2;  
Aq. dest. (sterilizat.), q. s. ad 100;  
Adde ac. carbol. (five per cent.), gtt. ii. M.  
Sig.—Normal solution for infiltration anæsthesia.

Or,

2. Cocainæ hydrochlor., .05;  
Codeinæ phosph., .06;  
Sodii chlor. sterilizat., .6;  
Aq. dest. (sterilizat.), q. s. ad 100;  
Adde ac. carb. (five per cent.), gtt. ii. M.  
Sig.—Normal solution for infiltration anæsthesia.

## III. Very weak solutions for extensive operations. (In use changing with the concentrated solutions):

- Cocainæ hydrochlor., .01;  
Morph. hydrochlor., .005;  
Sodii chlor. steril., .2;  
Aq. dest. (steril.), q. s. ad 100;  
Adde ac. carb. (five per cent.), gtt. ii. M.

In preparing the solutions the sodium chloride is heated to glowing and the water heated separately. Morphine and codeine lose their activity when heated. The solutions should be used cool,—59° F.

Powders of the salts can be prepared and subsequently dissolved in sterilized water when needed for use.

Of these solutions, the medicinal doses are: of I., 25 syringefuls; of II., 50 syringefuls; and of III., 500 syringefuls. In over three thousand patients, Schleich has always kept within these limits. Large doses of the cocaine-codeine solutions may be employed; of No. I. (with codeine), 50 syringefuls; of No. II. (with codeine), 100 syringefuls. The syringes are disinfected by frequent washings in equal parts of five-per-cent. carbolic acid and absolute alcohol. In three thousand cases no abscess or suppuration has resulted.

The parts are rendered anæsthetic to the first injection by spraying with ethylene chloride or ether spray. The scrotum, labia, anus, mamma, and throat must be carefully protected with glycerin, because the application of the ether here may easily cause burning. A small particle of cocaine or a drop of concentrated carbolic acid renders mucous surfaces anæsthetic for the first injection.

Schleich gives elaborate directions for the employment of his method of anæsthesia in the removal of tumor, in the operation for hydrocele, radical operation for hemorrhoids, abscess, furuncle, and whitlow.

Regarding the first, he says that in all operations requiring an initial incision through the skin, anæsthesia is begun by the establishment of a primary endermatic wheal,—that is to say, the canula must be thrust within the skin, under the skin only, so as to cover the slit; it must be introduced parallel with the surface. The injection produces a wheal the size of a five-pfennig piece, which is absolutely insensitive. Other injections are now made around the first. The thinner the skin the more easily it is rendered white by the injections. The line of wheals marks the line of incision. At right angles with this the injections are made again subcutaneously, and thus the tumor can be dissected without pain. As the wheal, when once formed, remains anæsthetic for twenty-five minutes, that time may be sufficient for extirpation and subsequent suture, otherwise anæsthesia must be reproduced.

## A CASE OF TUBERCULOUS EMPYEMA CURED BY INJECTIONS OF CONCENTRATED SALT WATER.

H. DUBIEF and A. BOLOGNESI (*Bull. Génér. de Thérapeutique*, August 30, 1894) gives the details of a case of tubercular empyema cured by injections into the pleural cavity of concentrated salt solutions. The patient had a marked history of alcoholism. As a consequence of a previous pleurisy, a purulent and tubercular empyema was developed which necessitated the practice of pleurotomy. After the operation was performed, the pleural cavity was repeatedly washed with the salt solution, with the result that a complete cure was effected in the course of two months, not even a trace of a fistulous opening having remained. The salt solution employed was made up as follows:

- Chloride of sodium, 5 drachms (20 grammes);  
Sulphate of sodium, 15 grains (1 gramme);  
Distilled water, 1.77 pints (1 litre).



The washings were well tolerated, and during their use the patient remained apyretic, felt well, and had a good appetite; the kidneys operated normally, and the increase of bodily weight kept on steadily until a complete cure was established by the expiration of the time referred to above. The authors do not give a thoroughly satisfactory explanation of how the salt arrested the tubercular development, but, with the happy results obtained in the remarkable case reported, suggest the utility of washing out the pleural cavity, as indicated, in cases of purulent pleurisy.

#### NATURE AND MANAGEMENT OF DIPHTHERIA.

SLAGLE, of Minneapolis, has for five years past employed in diphtheria, with the most satisfactory results, a saturated solution of sulphite of sodium to the fauces, early and diligently, either as gargle, spray, or with a soft brush, alternating it with the free application of sublimed sulphur (one the alternate hour), the sulphur applied either by an insufflator or brush (dry).

If the case has not been seen early, and the membrane is already considerable and does not readily yield to these applications, he sometimes supplements them with either a spray of peroxide of hydrogen or a spray of the following solution:

R Hydrargyri bichloridi, gr. ii;  
Glycerini, ℥ii;  
Aq̄æ, ℥vi. M.

It is remarkable how diphtheritic patients tolerate the mercurials and alcoholic stimulants. In nasal diphtheria these same solutions are to be diligently applied to the nares, either by syringe or brush.

As to the best general or systemic treatment, he has found nothing equally successful with calomel, sulphur, and sulphite of sodium combined in powders, as follows:

R Calomel, gr. vi;  
Sulphur,  
Sodium sulphite, of each, ʒss. M.  
Ft. chart. No. vi.

Sig.—One floating in a teaspoonful of water every three hours, and no liquid for half an hour after it.

This is to be followed by a teaspoonful of castor oil with 15 drops of turpentine, after all are given. These doses for a child of three years old and over; reduce the dose for infants. In the interval between powders, and after all are given also, give a teaspoonful of saturated

solution of the sulphite of sodium (every hour), and after the powders are all used and worked off (with the castor oil and turpentine), alternate the solution of sulphite of sodium with a teaspoonful of chloride formula, as follows:

R Potassii chloratis, ʒss;  
Ammon. muriatis, ʒi;  
Tinct. ferri muriatis, ʒii;  
Glycerini, ℥i;  
Aq̄æ, q. s. ad ℥iv. M.

This is only required in bad and anæmic cases. This has been Slagle's principal systemic treatment for five years past, and has proved very satisfactory, but is to be supplemented, of course, by the best possible hygienic conditions. Good, nourishing, and easily digested food (liquid), milk, animal broths, egg-nog, and after three days, in severe cases, alcoholic stimulants, or, better, tinctura nucis vomicæ and tinctura capsici, as follows:

R Tinct. nucis vomicæ, ʒii;  
Tinct. capsici, ʒss;  
Syr. prun. Virgin., q. s. ad ℥iii.

Sig.— $\frac{1}{2}$  to 1 teaspoonful every three or four hours.

For inhalation and disinfection he has found nothing better than the formula and methods suggested by Professor J. L. Smith, in the "Cyclopædia of the Diseases of Children":

R Ol. eucalypti, ℥i;  
Acidi carbolic, ℥i;  
Turpentine, ℥vi. M.

Sig.—2 tablespoonfuls in a quart of water in a broad pan, kept constantly simmering on a hot stove in the room of the patient.

We have been in the habit of abusing the stomach by harsh remedies in diphtheria, as much as the throat. We now know that it is of the utmost importance to maintain, so far as possible, the integrity of this organ, looking steadily to the appetite and digestion. If the stomach shows signs of weakening and revolt under our treatment, we must at once resort to rectal medication and alimentation, remembering always that a loathing or disgust for food is one of the very worst prognostics, as a fair appetite is one of the most favorable indications, in this affection.

As to the divisions or classifications of different forms of diphtheria which have been attempted by authors, notably by Morell Mackenzie, as (1) the simple catarrhal; (2) the typical; (3) the inflammatory; (4) the malignant; (5) the gangrenous (or putrid); (6) the chronic form, or into the fibrinous (or phlegmonous) and the septic (or malignant), there is evidently very little utility, except perhaps

to assist the student in diagnosis, excepting the especial form predicted upon the site or location of the pseudo-membrane,—viz., croupous or laryngo-tracheal diphtheria, which demands special forms of treatment and generally surgical assistance.

The main indications to be met, then, in the treatment of this affection seem to be :

1. To endeavor to retard or counteract the formation of the pseudo-membrane, and to dissolve and disinfect it when formed, thus endeavoring to prevent the entrance of the septic poison into the system.

2. Where it has become systemic, to endeavor to eliminate and counteract its effects by antizymotics, etc.

3. To support the system by tonics, stimulants, and nourishment.

4. To endeavor to prevent or combat the various sequelæ; and how this may best be accomplished the author endeavors to indicate by the teaching of representative men in the profession, as well as from his own personal experience, extending through a period of more than a generation of men.—*Northwestern Lancet*, July 15, 1894.

#### THE TREATMENT OF LARYNGEAL PHTHISIS.

After some general therapeutic considerations, LANGMAID, in the *Boston Medical and Surgical Journal* for July 19, 1894, speaks definitely of this subject. He points out that the means used in the treatment of the larynx consists in the local application of medicines, palliatives, and escharotics; surgical procedures, such as curetting ulcers, draining oedematous swellings by puncture and tracheotomy; the use of electrolysis has also its advocates.

The list of emollients and escharotics which have been used is a long one. We refer to some of these only which have retained their popularity after years of trial.

Lactic acid stands, perhaps, at the head of the list of local remedies. It is an escharotic, and it is claimed that it attacks only ulcerated surfaces. However this may be, it has certainly retained the confidence of those who have had the largest experience in treating laryngeal tuberculosis; it is used either with or without previous curetting. The application of the acid by simply brushing over the ulcers is not enough; it should be well rubbed in by means of a hard cotton pledget upon the end of a bent wire after the application of cocaine. The writer has seen suitable cases healed by it.

Menthol is of great value when used in a twenty-per-cent. solution in olive oil; its analgesic effects are of great service; it is not caustic; it seems to prevent and remove infiltration.

Iodoform, in the form of powder or by solution in ether, is sometimes very efficacious in relieving pain.

Resorcin, in eight-per-cent. solution, has its warm advocates; it certainly seems to diminish suppuration, and it can be safely used without the laryngoscopic mirror.

Some years ago morphine in glycerin was thought to be most useful in relieving dysphagia. The author, however, resorts to its use as seldom as possible.

Of the astringents, he prefers the acetotartarate of aluminum, which, in addition to its astringent properties, has remarkable antiseptic power.

The use of cocaine has been advocated as a remedy in excessive dysphagia. The writer has found that it soon loses its analgesic power and thinks it produces insomnia.

With regard to surgical procedures, he states that very remarkable cures have been effected by very vigorous curetting. When the oedema of the epiglottis and arytenoids is excessive, he frequently punctures, and feels sure that in quite a number of cases he has relieved dyspnoea.

Tracheotomy has been done to relieve dyspnoea and to rest the larynx.

The fact that cures by each method are reported would tend to show that topical treatment should be employed in every case of ulceration.

The treatment by caustics must be left to the skilled laryngologist, but if for any reason the assistance of such cannot be obtained, great comfort may be given the patient and his life may be prolonged by a harmless course of treatment which can be carried on by the sufferer and his physician. This treatment consists in the frequent cleansing of the lower pharynx and top of the larynx by an alkaline spray, thoroughly applied several times a day, and followed by the application of menthol in oil, as mentioned above. The programme may be varied by substituting from time to time the eighty-per-cent. resorcin or an astringent such as the aceto-tartarate of aluminum or iodoform in powder. The result of such treatment is some relief from cough and dyspnoea, perhaps healing of ulceration and diminution of swelling. The patient's comfort is secured because one great source of irritation is lessened or removed.

*NEW METHOD OF TREATMENT OF  
PULMONARY PHTHISIS.*

CARASSO contributes a lengthy paper to the *Medical Magazine* of July, 1894, and, after considerable discussion, concludes as follows:

1. The patient inhales the essential oil of peppermint in a continuous manner.

The simplest inhaler is a square linen handkerchief, one decimetre long, folded so as to form a small pad five centimetres by about two, which is held in place, below the nares, by means of two tapes tied at the back of the head or round the ears. In the latter case the tapes can be replaced by metallic supports like those used for spectacles, or by two elastic bands. The pad, which is changed as occasion requires, must be kept permanently applied, night and day, and only removed at meal-times. When the disease is not in an advanced stage, and still allows the patient to follow his occupation away from home, a piece of goose-quill containing some absorbent wool charged with peppermint can be held between the lips like a cigarette. 5 or 6 drops of essence of peppermint are dropped on the pad four or five times a day, and to avoid any irritant effect, especially in individuals with delicate skins, the alæ nasi are for the first few days anointed with vaseline. The patient is instructed to breathe deeply through the nose with the mouth closed, and to hold the breath as long as possible, so that the inspired air impregnated with the volatile oil of peppermint may remain in direct contact with the bronchial mucous membrane, the alveoli, and vomicae, and the air they contain.

The patient is then allowed a rest of ten to fifteen minutes, during which time he breathes in the ordinary way through the pad. Deep respiration is again resorted to, followed by a rest, and so on. As during the night the pad may not remain in position, it is well to pour 15 to 20 drops of the essential oil on the pillow every evening.

2. The patient at the same time takes the following creosote mixture:

Pure beech creosote, 8 grammes;  
Rectified spirits, 550 grammes;  
Glycerin, 250 grammes;  
Chloroform, 20 grammes;  
Essence of peppermint, 8 grammes.

1 tablespoonful every three hours during the day (after well shaking the bottle) in half a glass of sweetened water.

In case this should be too concentrated for the taste of the patient, the quantity of the water can be increased and the single dose divided into several. In special cases where there is in-

tolerance, it may be necessary to begin with 1 or 2 tablespoonfuls a day, gradually increasing to 4, or to have recourse to those substitutes for creosote which can be administered in large doses without drawback.

3. The patient is superabundantly fed. Milk in large quantities, according to individual tolerance, the daily quantity being increased, where possible, to 1 or 2 litres of sterilized or, at least, thoroughly well boiled milk. Meat prepared in various ways to suit the taste of the patient and invite the appetite. Generous wines, Marsala being specially suitable in daily doses of 400 to 500 grammes. The patient is surrounded with every care dictated by hygiene and confirmed by experience in the treatment of pulmonary disease, as regards the dwelling, the occupation, and the precautions to be taken now that the infectiousness of phthisis is an admitted fact. It is above all necessary to see to the immediate destruction of the sputa, so that the patient may not breathe a bacillus or spore-laden atmosphere and be exposed to reinfection.

The greatest vigilance is required to see that the treatment is scrupulously carried out, especially the continuous inhalation of the ol. menthæ piperitæ. Careless patients resort to all sorts of shifts to evade the inhalations, and the treatment may fail utterly for want of proper supervision. Unless special circumstances prevent it, it is necessary to continue the treatment for at least a month after the disappearance of the bacilli from the sputa and of the physical signs.

*TURPENTINE IN DIPHTHERIA.*

Professor George suggested the use of oleum terebinthinæ several years ago for diphtheria, on account of its antiseptic action upon the air-passages. It arrests fermentation and putrefaction and is very destructive to all forms of bacteria. The bronchial secretions are increased during its use, and without doubt its effect in croup is largely due to its local antiseptic action during its elimination from the system.

Turpentine cannot be advised as a certain remedy. The majority of cases will die in spite of any treatment, whether medicinal or surgical; but its employment is urged as an adjuvant to other treatment, given in extraordinary doses. It is useless to give a few drops hourly. It must be given in frequent large doses and persisted in as long as there is any chance whatever. A child two years of age

will take a teaspoonful every two hours without exhibiting any untoward symptoms whatever. The author has given it in nineteen cases and has had eleven recoveries.

Dr. Shimonek, of Milwaukee, has kindly reported two cases with one recovery; Dr. Malone, of the same city, four cases with two recoveries, making a total of twenty-six cases with recovery in fourteen, or about fifty-four per cent.—KELLOGG, in *Journal of the American Medical Association* for July 28, 1894.

#### CREOSOTE FOR PHTHISIS.

- R Creosoti (beechwood),  $\mathfrak{m}_{xxx}$  to  $\mathfrak{m}_{lxxx}$ ;  
Tinct. cardamomi,  $\mathfrak{f}_{iv}$ ;  
Glycerini,  $\mathfrak{f}_{ii}$ ;  
Alcoholis, q. s. ad  $\mathfrak{f}_{iv}$ . M.

Sig—2 teaspoonfuls in water after meals.

NOTE—To the glycerin add the creosote, then the tincture of cardamom and alcohol.

The above is used in cases of pulmonary tuberculosis presenting evidences of breaking down of tissue, or in which signs or symptoms of catarrhal processes in any portions of the air-passages are present, or in which there is continuous elevation of temperature, or intermittent or remittent fever exceeding  $99\frac{1}{2}^{\circ}$  F. The smaller dose of creosote is used at first, and the quantity gradually increased until 5 drops four times a day is reached as a maximum.—COHEN, in the *Polyclinic* for July 14, 1894.

#### TREATMENT OF CROUPOUS PNEUMONIA.

In the *Journal of the American Medical Association* for July 28, 1894, KERR writes on this topic, and, after some introductory remarks, states that recently some clinicians have given digitalis from the commencement of an attack of pneumonia, on the basis that the increased force of the cardiac contractions will tend to prevent or diminish pulmonary congestion; this is unnecessary. So long as the heart is doing its work well, it should be left to itself and attention devoted to other parts of the treatment, such as reduction of temperature, elimination of waste matter, maintenance of the patient's strength, etc.; but just as soon as there is any sign of the heart becoming weak, digitalis should be given in such doses and with such frequency as the case demands. An average dose for such purposes is 15 minims of the tincture every three hours, until there is some influence on the pulse, after which the dose may be gradually reduced.

Should the patient not come under observation until the venous system and right side of the heart are engorged to such an extent that there is too much blood for the ventricle to conveniently handle, the author does not know of any treatment that will give better results than the administration of digitalis and the simultaneous removal of blood by venesection. In plethoric persons the same line of treatment is preferable to the administration of the vasodilators and cardiac depressants, such as aconite or veratrum viride, a process that has been justified under the clap-trap phrase, "bleeding a man into his own veins," but which really means an effort to increase the capillary area and leave the tissues full of imperfectly oxygenated blood without diminishing the amount of blood that the right ventricle has to accommodate. As the systemic is quite distinct from the pulmonary circulation, an increase in the systemic capillary area will only relieve the resistance against which the left ventricle contracts by allowing a more ready flow of blood into the venous system, but will not diminish the current of blood that has to pass through the right ventricle and pulmonary capillaries in order that it may be properly oxygenated.

Digitalis frequently fails in the treatment of pneumonia, because its action is essentially on the nervous system, and this is often deranged by the effects of temperature and toxic agents, so as to be insusceptible to the influence of the drug. Under such circumstances the simultaneous administration of strychnine will frequently increase nervous sensibility, so that the effects of the digitalis can be obtained.

The writer protests against the indiscriminate use of digitalis, and urges that the condition of the pulse should be the guide. Unfortunately, the introduction of the thermometer, sphygmograph, and other mechanical aids to diagnosis have greatly supplemented the use of the fingers, and comparatively few of us can equal the physician of thirty years ago in interpreting the pulse. The thermometer and similar agents are invaluable in showing the existence of certain conditions; the fingers on the pulse show how the patient is being affected by the drugs. When we give as much attention to the pulse as did our predecessors, and view the condition of the pulse in its relations to morbid anatomical conditions and the changes which these are liable to undergo, then shall we be able to follow a more rational line of treatment and more frequently conduct our patient through a serious illness.

## PRESCRIPTIONS.

For gonorrhœa:

- R Copaibæ bals.,  $\mathfrak{m}\text{iv}$ ;  
Ol. santali,  $\mathfrak{m}\text{v}$ ;  
Ol. cinnamomi,  $\mathfrak{m}\text{i}$ .  
Ft. in capsul. No. I.

From 6 to 12 capsules to be taken in the day, one hour after meals.

For incontinence of urine:

- R Sodii benzoati, gr. xv;  
Sodii salicylati, gr. xvii;  
Ext. belladonnæ, gr. xxx;  
Aq. cinnamomi, q. s. ad  $\mathfrak{z}\text{iv}$ . M.

A teaspoonful to be taken four or five times a day.

Useful in sluggish conditions of the liver:

- R Podophyllini, gr.  $\frac{1}{4}$ ;  
Euonyminæ, gr. iss;  
Ext. belladonnæ, gr.  $\frac{1}{4}$ ;  
Pil. hydrarg., gr. ii. M.  
For 1 pill, to be taken at bedtime.

A good evaporating lotion:

- R Ammonii chloridi,  $\mathfrak{z}\text{i}$ ;  
Sp. rectificati,  $\mathfrak{z}\text{ii}$ ;  
Sp. ætheris,  $\mathfrak{z}\text{i}$ ;  
Acid. acetic.,  $\mathfrak{z}\text{iss}$ ;  
Aq. destill., q. s. ad  $\mathfrak{z}\text{xii}$ .  
Solve et M.

To be applied on lint in severe sprains, etc.

For ozæna:

- R Acidi carbolici, gr. xxx;  
Resorcin (crys.), gr. xlv;  
Glycerini,  $\mathfrak{z}\text{iss}$ ;  
Aq.æ, q. s. ad  $\mathfrak{z}\text{xii}$ . M.  
To be used as a spray.

—*Medical Press and Circular*, July 11, 1894.

TYPHOID FEVER, WITH SPECIAL REFERENCE TO TREATMENT BY ANTI-SEPTICS.

This much-discussed subject in therapeutics is considered by KOENIG, of Pittsburg, in the *Medical Review* for July, 1894. He details his personal experience, and tells us that creosote was first chosen by him as the remedy, but as it is often difficult to obtain a good article of this drug, and as it possesses a stronger and more disagreeable empyreumatic odor than guaiacol, it was soon displaced by the latter, the main and most valuable constituent of creosote.

During the year 1893 thirty-three cases of typhoid fever were treated by the writer with this remedy; in no case was there intestinal hemorrhage, and none died. The author is aware of the fact that upon this number of cases no absolute conclusions can be based;

but it is nevertheless true that the epidemic during which they occurred was not wanting in virulency, as the four hundred and seventy-three fatal cases—a percentage of thirteen and a fraction of the entire number reported—indicate.

The method pursued in administering the remedy was according to the following prescription:

- R Guaiacolis,  $\mathfrak{z}\text{ii}$ ;  
Glycerini,  $\mathfrak{z}\text{ii}$ ;  
Alcoholis,  $\mathfrak{z}\text{xi}$ . M.

Sig.—5 drops in whiskey and water every two hours.

It was the writer's custom to vary the dose of the remedy according to the age of the patient, or according to the tolerance manifested towards the drug. Occasionally not more than 2 drops were given, while not infrequently 6 drops was the dose. To insure perfect solution in the water with which it was given, it was directed that a teaspoonful of whiskey be placed in a small drinking-glass; into this the guaiacol was dropped, and from 2 to 4 tablespoonfuls of water added. In about three cases the drug was not well borne; in one it was necessary to discontinue its use entirely. This case—one of four in the same family—was strong evidence, to his mind, of the value of the guaiacol. While the three other members of the family attacked with the fever were practically well after the fourth week, the one in whom the remedy produced gastric disturbances necessitating its discontinuance, passed through a six weeks' course, and was even then in a more than ordinarily debilitated condition for a month or two.

In addition to the guaiacol, the author, as a rule, administers small doses of calomel,  $\frac{1}{10}$  to  $\frac{1}{16}$  grain three or four times a day, until a slight purgative action is induced, when it is discontinued for the time being. During the latter part of the disease, when constipation is the rule, the same remedy was again employed, and always with excellent result. One teaspoonful of whiskey was given with every dose of medicine, and when the vital forces became weakened larger amounts were resorted to.

High temperature was controlled by frequent cold sponging. One case treated in Allegheny General Hospital received antipyretics of the coal-tar class from the resident physician. The antipyretic action of this drug was very prompt and decided, but was followed by a condition of great prostration, bordering on collapse. After this experience the temperature was reduced by sponging, which calmed and quieted the patient at the same time that

the fever was reduced, and without prostration.

The diet was liquid, and consisted of meat broth, beef-tea, and milk, the latter usually diluted by one-half with barley-water. During the height of the disease, when no desire for food is manifested, very little nourishment is given. Under this antiseptic treatment the time to begin the administration of solid food becomes a matter of great importance. The observation was made a number of times that when the temperature dropped to the normal point, during the latter part of the third week, though the tongue still remained coated, if solid food was given a relapse, indicated by a return of the morning and evening elevation of temperature, occurred. This can, doubtless, be referred to the disturbing influence that solid matter in considerable amounts would exert while passing over the unhealed ulcers, and the greater difficulty experienced in keeping such intestinal contents in an aseptic condition.

In illustrating the typical course through which the majority of the patients passed, the author presented the temperature record of Mr. G. M., aged twenty-four, who came under observation and treatment about the beginning of the second week of the attack. For the first week after treatment was begun he had three or four loose passages each day, and therefore no calomel was given.

The result of these cases treated after this plan during the past year he thinks warrants him in believing the following conclusions justified:

1. The antiseptic treatment is the rational treatment of typhoid fever.

2. Under its use the course of the disease is greatly modified, tympanitis is prevented, the tongue remains moist throughout, delirium is rare, and the intestinal tract is placed in the best possible condition for the healing of wounds.

3. Small quantities of alcohol often repeated sustain the vital forces better, during the height of the fever, than albuminous or starchy food.

4. In private practice cold sponging is the best antipyretic and nerve sedative.

5. As the temperature under this method of treatment often becomes normal before the ulcers are healed, care must be observed in the administration of solid food. A perfectly clean tongue rather than absence of fever is the indication for solid food.

6. The cost of the medicine and whiskey during the entire course of the disease rarely exceeds five dollars, which is a factor of no little importance with many patients.

7. Guaiacol exerts no disturbing influences on any organ, except in rare cases, when a very irritable stomach may reject it.

8. It should be given day and night, and, in the form of the prescription before mentioned, may be gradually increased to 7 or 8 drops every second hour.

9. Guaiacol prevents the later toxine-poisoning, doubtless because of its action on the bacillus coli communis and other putrefactive germs in the intestines.

10. Guaiacol is non-poisonous in ordinary doses.

#### ACONITE.

M. BLACHE (*L'Union Médicale*) has been employing the tincture of aconite with benefit in the diseases of children, especially in catarrhal and spasmodic diseases of the respiratory apparatus. The following is his general formula:

Tincture of aconite, 5 to 15 drops;  
Tincture of belladonna, 4 to 10 drops;  
Syrup of Tolu, 2½ drachms;  
Distilled water, 4 ounces.

A small teaspoonful every hour.

In cases of cardiac trouble superadded to the respiratory, he prescribes—

Tincture of aconite, 5 to 15 drops;  
Tincture of digitalis, 6 to 12 drops;  
Syrup of codeine, 3 drachms;  
Mucilage julep, 4 ounces.

A small teaspoonful every hour.

As a sedative, he recommends aconite in eruptive fevers as an antipyretic, and in painful affections as an anæsthetic, his prescription being—

Tincture of aconite, 5 to 15 drops;  
Cognac brandy, 2 to 6 drachms;  
Mucilage julep, 10 ounces.

A small teaspoonful every twenty minutes.

These observations of M. Blache correspond with those of Dr. B. Yeo: "It is quite remarkable how a few doses of aconite will rapidly subdue the febrile attacks which are commonly associated with local inflammation or other disturbances of health in children and young people." The great value therapeutically of aconite in children's diseases has been ascertained by clinical experience, and is as yet imperfectly realized by the majority of practitioners.—*Medical Press and Circular*, July 11, 1894.

*IMPERMEABILITY OF HEALTHY VESICAL  
EPITHELIUM WITH REFERENCE  
TO DRUGS AND POISONS.*

MM. BOYER and GUINARD, operating on full-grown dogs, with all the precautions necessary to prevent injury to the bladder, have ascertained that that viscus can tolerate and keep unchanged, without any local or general physiological indication of absorption, the following alkaloids in fractions of grammes: Pilocarpine, .10; cocaine, .50; morphine, .15; veratrine, .05; arsenate and chlorhydrate of strychnine, .10.—*Provincial Medical Journal*, September 1, 1894.

*TREATMENT OF EPILEPSY.*

In the *Virginia Medical Monthly* for September, 1894, in an article on epilepsy, DREWRY states that he has found some excellent prescriptions for routine treatment, as follows:

R Potassii bromidi, gr. xx to gr. xxx;  
Sodii bromidi, gr. x to gr. xx;  
Ammonii bromidi, gr. v to gr. x;  
Potassii bicarb., gr. v. to gr. x;  
Liquor potassii arsenitis, gtt. iii;  
Sp. menth. pip., ℥v;  
Aque, f3ss. M.

Sig.—Take after meals in glass of water.

R Potassii bromidi,  
Chloral hydrat., of each, gr. xv to gr. xx;  
Strychniæ sulph., gr.  $\frac{1}{8}$ ;  
Ext. ergotæ fl., f3ss;  
Ext. digitalis fl., ℥j;  
Sp. menth. pip., ℥v;  
Aque, q. s. ad f3ss. M.

Sig.—Take in sufficient water after each meal.

R Potassii bromidi,  
Sodii bromidi, of each, gr. x to gr. xxx;  
Ext. ergotæ fl., gtt. v;  
Tinct. nucis vom., gtt. v;  
Atropiæ sulph., gr.  $\frac{1}{16}$ ;  
Sp. menth. pip., ℥v;  
Aque, f3ss. M.

Sig.—Take as in preceding.

R Sodii boras,  
Sodii bromidum, of each, gr. xxx;  
Aque, f3ss. M.

Sig.—Take in wineglassful of water three times a day after meals.

When there is maniacal excitement, the addition of cannabis indica or hyoscyne proves serviceable; the latter should be given hypodermically. In hystero-epilepsy, physostigma, combined with bromide of potassium, acts quite well in the author's hands. The systematic administration of chloral yields good results in petit mal.

*TREATMENT OF VAGINISMUS.*

In an article in the *Provincial Medical Journal* for September 1, 1894, MADDEN states that he has based his treatment of this state on certain reasons, and has found it most successful in these cases,—viz., first, the employment of constitutional nerve sedatives and tonics to allay the general neurotic condition; and, secondly, the application of local nerve-stretching to the affected parts. On the latter point the writer briefly recapitulates the steps of the local procedure which he has proved the efficacy of, and which he would, therefore, venture to recommend to other practitioners. First, then, the patient, properly prepared for an antiseptic vaginal operation, and the rectum and bladder evacuated, is to be etherized and placed in the ordinary left lateral semi-prone position; secondly, a large-sized bivalve vaginal speculum is to be introduced and the blades then fully expanded; thirdly, a tampon of antiseptic cotton or wool, saturated in boroglyceride, is to be passed in through the speculum, so as to fill its calibre from the vulva to the roof of the vaginal vault; fourthly, the speculum, still widely expanded, is to be forcibly withdrawn, so as to overcome the contractility of the parts and at the same time thoroughly stretch, or even slightly rupture, the affected nerve-fibres. In so doing some little abrasion of the vaginal walls may possibly be occasioned; but any hemorrhage therefrom will be sufficiently controlled by the tampon, on which counter-pressure should be made during removal of speculum, so as to retain the included plug in the vagina, where it may be left for at least twenty-four hours, and then at the same intervals replaced by other antiseptic tampons, which should be employed for the next week to maintain the patency of the passage. Immediately after removal of these tampons the vagina should on each occasion be thoroughly flushed out with some antiseptic injection. Finally, if at the end of a week any evidence of vaginismus or spasmodic contraction should still remain, then the same procedure may be again repeated, after which it will probably be found that the passage has regained its normal sensibility and capacity. In some exceptional instances that curative result may not be thus obtainable, and in such cases it may possibly become necessary to resort to the removal of any specially hyperæsthetic tissues in the vulva vaginal area, or else to some of the recent modifications of Sims's or Emmett's operations for vaginismus. These procedures will, however, be comparatively seldom required by gynecologists, who may adopt

the simpler and, according to the author's experience, generally effectual plan of treatment which he has described.

*REMARKS UPON THE MEDICINAL TREATMENT OF CHRONIC EPILEPSY.*

BONDURANT, after careful observations on a large number of epileptics, states that prominent among the many drugs which have been largely used is sodium borate, which has been the subject of extensive experimentation, both in this country and abroad, during some years past. It has been advocated as a substitute for the bromides in certain cases, and accredited with active antispasmodic virtues. He gave it at one time a quite extended trial in the wards under his charge, using it in a variety of cases in quantities of as much as 12 grammes daily, continued for several weeks without ill effect. It was usually given in solution in water, with a little glycerin added. The small doses—1 gramme three times a day—seemed without effect; 6 to 8 grammes a day served in many cases to reduce the number of convulsions, but exerted no marked influence upon the character of the convulsive seizures, nor upon the mental state of the patients. The appended table exhibits the results obtained in fourteen cases in which 6 grammes daily were given for thirty days.

Of the cases mentioned in the table the author gives, all except three show a reduction in the number of seizures; and in two of the instances in which the convulsions occurred more frequently while the borax was being used, a marked diminution in the number of attacks is noted during the thirty days succeeding the withdrawal of the drug. In no instance was any markedly favorable influence upon the physical or mental condition of the patient to be observed. In several cases not included in the table the borax showed absolutely no influence in checking the seizures. In two instances complications arose. In one patient, a white woman twenty-seven years of age, having one or two convulsions a month, the administration of 1.5 grammes of the drug caused vertigo and headache, which disappeared promptly upon withdrawal of the borax, to as promptly return when, after a few days, the borax was again administered. In the second case, a white female, fifty-three years of age, who had usually not more than four or five attacks yearly, three days' use of borax (2 grammes three times a day) was followed by a general urticaria-like eruption upon the skin;

this eruption disappeared when the borax was discontinued, but reappeared when the medicine was again given, this occurring three successive times. Then  $\beta$ -naphthol (.3 gramme) was given in connection with the borax, and no eruption appeared, although the borax and naphthol were continued for some weeks.

Hare, in his monograph, speaks quite enthusiastically of the action of acetanilide, placing it next after the bromides as an antiepileptic agent, and remarking that especially in chronic epilepsy is its influence most favorable; but with the class of patients we have to deal with the results so far shown are doubtfully favorable or entirely negative. One or two cases seemed to do rather better under its use than under the bromides. There is no dulling of intelligence among its effects; whenever the mental state seems at all affected, the change is for the better.

Phenacetin has given in our hands about the same results as acetanilide. It has been given in the same doses and to many of the same patients; no ill effects were noted. In most instances it seemed utterly inert.

With antipyrin the final result is scarcely more favorable than is the case with the two remedies above mentioned. In a majority of the cases no effect is produced. In one case the drug has acted injuriously; in two the effect has been beneficial; in one of these very markedly so. The drug has been repeatedly used in this case, with improvement in mental state and physical health, and diminution in number and severity of convulsive attacks in every instance; in this same case the bromides produce much mental dulness and usually increase the number of fits; borax, acetanilide, phenacetin,  $\beta$ -naphthol, and other drugs have been used without effect; so it would seem that in this one case antipyrin is of positive value.

No bad effects were seen in any instance. The drug seems well borne, and large doses (3 to 5 grammes daily) can be continued for many weeks without danger.

Peterson and others have spoken well of  $\beta$ -naphthol, the basis of its alleged good effect in selected cases being its action as an intestinal antiseptic, a certain small percentage of epileptic convulsions being, it is claimed, excited by the absorption of toxic matters from the intestinal tract. We have used the drug to some extent as an intestinal antiseptic in cases of epilepsy, as well as in other forms of disease and insanity, and with excellent results as regards the relief of the immediate symptoms of intestinal poisoning; it seems also to exert some favorable influence upon the course of the



disorder under consideration, as shown by a reduction in the number of convulsions greater in proportion than has been obtained with any one of the four first-named remedies.

The practice of bloodletting in the status epilepticus is by the majority of authors not mentioned, or only mentioned to be condemned. The very favorable results given by this procedure in the writer's wards, however, bespeak a further trial of venesection for the relief of this condition. Our present custom in dealing with the epileptic state is to give a full dose of chloral in the beginning of the attack, repeating it, if necessary, after two to four hours; if the convulsions are not checked, or persistently recur as the effect of the chloral wears off, a vein is opened and twelve to twenty-four fluid ounces of blood are drawn. The results under this treatment are all that could be desired.

To briefly summarize:

1. Borax, antipyrin, acetanilide, phenacetin, and many other alleged antiepileptic agents are, save in rare cases, without influence over the course of chronic epilepsy with insanity.

2.  $\beta$ -naphthol is occasionally beneficial, but probably not more so than catharsis.

3. The bromides will postpone the occurrence of the convulsions, but in most cases do more harm than good.

4. In dealing with the maniacal attacks, seclusion may be necessary. Sedatives should be employed very rarely, if at all.

5. The best single remedy in the status epilepticus is bloodletting. Of drugs, the most valuable is chloral.—*American Journal of Insanity*, July, 1894.

#### CASE OF PENNYROYAL-POISONING.

STEPHEN reports, in the *Provincial Medical Journal* for September 1, 1894, the following: On May 8, about 1 A.M., the reporter was called to see Mrs. C. On entering the house it smelt very strongly of what at first struck him as oil of peppermint; the patient was lying on her back, her face pale and pinched, mouth wide open, pupils widely dilated, body cold and clammy and almost pulseless. She was quite unconscious, and her breath smelt very strongly of this oily substance. She could only be roused to semi-consciousness with difficulty. She swallowed a pint and a half of strong hot coffee, which in a few minutes she vomited; the vomit smelt very strongly of the oil. She drank another similar quantity of hot coffee and again vomited. By this time she was showing symptoms of collapse, so the

writer gave her half a glass of Scotch whiskey neat; she began to ramble a little. Shortly after,—about ten minutes or so,—he gave her a pint of strong hot coffee to drink, followed in a few minutes by 30 grains of sulphate of zinc with a quarter of a teaspoonful of powdered ipecac, in some lukewarm water; this made her vomit, and then she collapsed. Artificial respiration was resorted to and kept up for twenty minutes; all the while she was being rubbed with whiskey on the legs, thighs, and abdomen. In about half an hour she was able to swallow, so he gave her another half-glass of whiskey, which revived her, and her pulse improved; she was then allowed to be quiet for an hour, and at the end of that time given 2 ounces of castor oil; this she vomited almost immediately and then collapsed. Artificial respiration was again employed and some whiskey and two pills (pil. coloc. cum hyoscyami, B. P.) given her. The pulse and general condition improved and she fell asleep, and the physician left at about 4.30 A.M. He saw her again at eight o'clock. The pills had operated and the smell of oil throughout the whole house was something stifling, but the patient was much improved. She got up towards afternoon and was able to move about the house on the following day, but was of course very weak. She was all right in the course of a week, but for quite that time her breath and skin, also her stools and urine, smelt strongly of this oily substance.

The cause of this condition was that the woman was not very strong and had had very bad times during previous pregnancies and confinements, and as she had passed her menstrual period about a week, she concluded she was pregnant, so, in terror of this, she went to a local herbalist and purchased an ounce of essence of pennyroyal, the whole of which she swallowed at once, except a few drops in the bottom of the bottle, with the view of bringing on menstruation, instead of which she produced the condition herein described.

#### IODOFORM IN TUBERCULOUS PHTHISIS.

A. FOXWELL (*Birmingham Medical Review*, July, 1894) has had considerable experience of the value of iodoform in the treatment of tuberculous phthisis during the last eight years, and on the whole he considers it the most satisfactory of all the antiseptic drugs which have been used in tuberculosis. He has examined his out-patient case-books for 1886, 1887, and 1888, but, of the many in-

stances in which iodoform was used as the main treatment he could only collect forty-six where the notes were kept with sufficient persistency to make them worthy of record. Of these, twelve were much improved, fifteen improved, eleven remained the same, and eight grew worse; that is, fifty-nine per cent. improved and seventeen per cent. grew worse. Of the twelve who much improved, six had reached the third stage, but only two of these had both lungs attacked, and only one among the fifteen who improved; eleven had reached the third stage, and seven had both lungs involved. Of those who grew worse, five had both lungs attacked, and three of these had reached the third stage. Of the eleven who remained stationary, seven had reached the third stage and five had both lungs diseased. From these statistics it appears that the advanced cases did as well as the early ones. This the author thinks to be due mainly to the favorable nature of the advanced cases, these being mostly cases of localized cavitation or those in which considerable fibrosis had occurred. The unfavorable advanced cases doubtless felt themselves too ill to stand the exhaustion of out-patient attendance. The usual prescription was one 1-grain pill, to be taken six times a day. The dose never exceeded that amount, and was occasionally less, the average being five grains daily. In three cases only were any symptoms of poisoning detected, and these were merely of a mild gastric nature. The author also tried the drug in conjunction with oil and tonics, and compared both classes of cases with those in which oil and tonics alone were used. The conclusion he arrived at after a three years' trial was that iodoform given by itself gave better results than any other drug or combination of drugs he had tried or seen tried. It soothed the nervous system of erethic subjects; it very greatly lessened cough and expectoration; it powerfully increased nutrition, the patients often becoming quite plump under its continued use; finally, there was as great, if not greater, improvement in the physical signs than the author has seen accomplished by any other mode of treatment, except that of climate and hygiene. Foxwell has since used iodoform for the cure of phthisis in some private patients and in some hospital in-patients, and his later experience fully bears out his previous impressions. As regards mode of administration, the author believes it to be always safe to begin with 2 grains *t. d. s.* If the patient has difficulty in steadily taking this small dose, it is useless to persevere any further with the drug. "Having satisfied yourself," says the author,

"by three or four days' treatment that the daily dose of 6 grains can be well borne, order it to be increased by two grains every other day till 30 grains are reached. Keep the patient to this daily dose for at least three months, and at a somewhat lower level (should all signs of activity have vanished) for three months longer." If the patient does not strongly object, he always advises its continuance for a year. Foxwell has usually limited himself to a maximum dose of 30 grains a day.—*British Medical Journal*, September 8, 1894.

#### CHLOROFORM DURING SLEEP.

The following case is of interest, as bearing on the question whether a sleeping person can be chloroformed without awakening. The reporter was asked to take two teeth out for a girl aged seven, and, as she is very timid and excitable, to give her chloroform. On going to her home he found her lying on her back in bed, sound asleep. Having poured about 2 drachms, probably more, of chloroform on a folded towel, he gradually brought it to about two or three inches from her mouth and held it there. She went on breathing quite quietly, and neither coughing nor making any unwonted movements. In a very short time she was so well under its influence that her hand fell down when raised and the conjunctiva was insensible to touch. She was then lifted out of bed, carried into another room, and laid on a sofa without her giving any sign of consciousness. On opening her mouth, however, she put up her hands and turned her head on the pillow. More chloroform was given, and almost immediately she was in a state of complete anæsthesia and the teeth were extracted. She was easily aroused, but almost momentarily fell again asleep, and slept for two hours. When she awoke she was much astonished to find that her teeth were out.

#### FERRATIN.

GERMAIN SÉE (*Presse Méd.*, August 25, 1894), in a communication to the Académie de Médecine, states that even after prolonged use ferratin causes neither gastric nor intestinal derangement in men or animals. It acts as a slight astringent without causing injurious stimulation, and it never causes the development of  $H_2S$  as the result of putrefaction in the intestine. Its local effect on the gastrointestinal tract shows itself constantly in restoration of appetite and improvement in the

quality of the stools. It is absorbed slowly, but animals weighing from five to seven kilos have had to take from five to twenty litres of milk in order to absorb the same quantity of iron as could be conveyed in .1 to .2 gramme of ferratin. The dosage should be so regulated that the intestine shall always contain an excess of ferratin which the organism can use according to its needs. There is no reason to fear the accumulation of an excess of iron in the organs; absorption and elimination appear spontaneously to balance each other. Ferratin is, therefore, in the first place, an alimentary substance, and can be employed in men apparently healthy or in children and chlorotic subjects, as the curative action is not interfered with by injurious secondary effects, as is often the case when ordinary ferruginous preparations are used. The dose of ferratin is from 5 centigrammes to  $1\frac{1}{2}$  grammes (1 to 22 grains) two or three times a day; each dose contains about seven per cent. of iron.—*British Medical Journal*, September 8, 1894.

#### TRACTION ON THE TONGUE IN HYSTERIA.

TH. BALDLE (*Gaz. des Hôp. de Toulouse*, July 28) has in two cases made very violent hysterical attacks cease by traction on the tongue, the organ being drawn with some force out of the mouth and kept in that position for some minutes. This procedure was successful when every other treatment had failed.—*British Medical Journal*, September 8, 1894.

#### THE ANTITOXIN TREATMENT OF DIPHTHERIA.

A certain degree of immunity to diphtheria, lasting for a comparatively short time, can be conferred on animals by inoculating them with attenuated cultures of the specific bacillus, or by injecting a suitable quantity of the serum of an animal who has suffered from the disease in some form which has conferred on it immunity. Since it is probable that the cessation of the pathological process of an acute specific disease—that is to say, recovery—is due to the production of a condition strictly analogous to, or rather identical with, acquired immunity, the suggestion was made that the acquisition of this desired immunity during the existence of the disease might be hastened by the introduction into the organism of a quantity of the serum of an immune animal. This principle has now been applied in the treatment of two dis-

eases,—tetanus and diphtheria. Some striking results have been reported in tetanus, but the question of the value of the method in this disease is not yet settled. The claims made on behalf of the treatment of tetanus by antitoxin have been much criticised in an adverse sense. These criticisms have been founded in great part on the small number of cases which have as yet been treated, since in a disease which is not invariably fatal only a long series of cases can eliminate the source of fallacy which would be found in a run of mild cases. In the case of diphtheria this source of fallacy is being rapidly eliminated. The number of cases now on record by German observers is very considerable. The results, on the whole, have been remarkably encouraging, and apart from statistics, the marked improvement noted in many cases within a few hours after the administration of the first or second dose has carried conviction to the minds of those who have had the opportunity of observing the cases.

The earliest published cases of diphtheria treated by this method were a series of thirty reported by Behring and Kossel in April, 1893. Of these, twenty-four, or eighty per cent., recovered. For various reasons, among others the difficulty of obtaining the serum, it was some time before the example of the discoverer was followed by other physicians, but in April, 1894, Ehrlich, Kossel, and Wassermann reported the results in two hundred and twenty unselected cases of diphtheria treated by the hypodermic injection of the serum of goats rendered immune by giving them increasing doses of dead diphtheria cultures. Among the one hundred and fifty-three cases which it was not necessary to submit to tracheotomy, the mortality was only 23.6 per cent. In six treated on the first day there was no death, and in sixty-six treated on the second day there were recoveries amounting to ninety-seven per cent., whereas in twenty-three treated on the fourth day the percentage of recoveries fell to 56.5 per cent. In half the fatal cases the disease was so far advanced as to make recovery almost hopeless when the treatment was commenced, and in some other instances the stock of serum ran out. It is important to add that in a few instances the great improvement noticed in the first two days was not maintained, and the patients died in ten days or a fortnight of nephritis or cardiac failure. Nevertheless, Ehrlich and his co-workers believed that they had reason to hope that the serum treatment would eventually diminish the number of cases in which nephritis and paralysis occur as complications. The results in the cases submitted to tracheotomy were not so

favorable, the mortality being 44.9 per cent. The results of the treatment reported by Weibgen, from Hahn's clinic in Berlin, are not very conclusive: The number of cases was sixty-five. Of the patients submitted to tracheotomy, forty-four per cent. recovered; of the others, seventy-two per cent. The epidemic, however, was of a mild type, and by other methods of treatment the rate of recovery had been so much improved that in 1893 it had reached sixty-three per cent. among the cases not submitted to tracheotomy, and forty per cent. among those who did undergo the operation. The results in the Emperor and Empress Frederick's Children's Hospital are the most striking, the mortality, which had been over forty-one per cent. for fourteen months previous to the adoption of the serum treatment, falling, according to Katz's report, suddenly to 13.2 per cent., the number of cases being one hundred and twenty-eight. Weilgers saw his mortality fall from fifty-three to twenty-eight per cent., the number of cases treated with the serum being sixty-three.

There is some evidence that a person may be rendered immune to the infection of diphtheria by preventive inoculations. Klemensiewicz and Escherich have found that guinea-pigs can be rendered immune to diphtheria by inoculation with the blood-serum of patients just recovered from the disease. Wernicke succeeded in producing a certain degree of immunity in dogs by feeding them on the flesh of sheep which had been rendered refractory to diphtheria. The immunity in either case was of short duration, but Wernicke's observation that the immunizing principle is present in the tissues and can be absorbed from the intestinal canal is of great interest, and appears to open up a new method of administering the remedy comparable to the thyroid-feeding in myxoedema which has now so generally replaced the injections of thyroid extract at first. Wernicke succeeded in rendering his dogs more immune by inoculating them with increasing doses of the virus contained in old cultivations of the diphtheria bacillus, and he found that the serum of these dogs had so high a protective power that it rendered guinea-pigs immune to infection by a dose ten to fifteen times as large as was necessary to kill an unprotected animal. He found also that injections of the serum of these immunized dogs could bring about the recovery of guinea-pigs inoculated twenty-four hours previously with a fatal dose of the diphtheria bacillus. Katz inoculated seventy-two children exposed to the disease; only eight contracted it, and all of these recovered after a mild attack.

In the current number (September 3) of the *Berliner Klinische Wochenschrift*, Behring publishes a paper, in which, among other points, he deals with the question of dose. He states that the serum prepared and tested under his own supervision and that of Ehrlich is now issued in two forms,—No. 1 and No. 2; No. 2 is two and a half times stronger than No. 1. No. 1 is sufficient for the treatment of a case of diphtheria in a child under ten years of age, if it be seen on the second or third day. In cases of longer standing, in those of a very severe type in young children, and in adults a repetition of the injection will be necessary. No. 2 serum acts more surely and rapidly in these cases, but, owing to the difficulty of rendering the animals sufficiently immune to provide a serum endowed with immunizing powers so strong, a constant supply cannot be insured.

The estimation of the exact strength of the serum is a difficult matter, and it must be recognized that the strength is liable to vary with the commercial source from which it is obtained. Behring and Ehrlich have devised a method of expressing the strength in figures. Their No. 1 (quality and quantity) contains ten cubic centimetres, which is equal to six hundred antitoxin normals, and is sufficient for one case, with the limitations already mentioned. No 2 contains 11.5 cubic centimetres of a strong serum, and is equivalent to about fifteen hundred antitoxin normals. Behring now estimates that the death-rate of cases treated within forty-eight hours of the onset of the disease with No. 1 ought not to exceed five per cent.

The dose to be injected as a prophylactic in persons liable to be exposed to diphtheria is set down by Behring at 60 antitoxin normals, or  $\frac{1}{10}$  of No. 1. After infection—that is, during the incubation stage—he believes that 150 antitoxin normals ought to avert the development of the disease.—Editorial in the *British Medical Journal*, September 8, 1894.

#### NON-OPERATIVE TREATMENT OF HEMORRHOIDS.

GIBBS writes on this subject in the *Post-Graduate* for September, 1894. He makes no distinction between the two common varieties of piles,—the internal and external,—because the treatment of either answers for the other. There is a very painful little tumor frequently seen on the verge of the anus, very much the size and color of a huckleberry, consisting of a small thrombus in one of the marginal veins,

covered partly with skin and partly with mucous membrane. If let alone, the clot is absorbed and the tumor disappears, or else becomes infected, suppurates, and cures itself spontaneously; but in either case only after, perhaps, a week of suffering. In these cases the proper plan—and few patients will object—is to use a few drops of cocaine, laying open the cavity and pressing out the entire clot, thus curing the trouble and stopping the pain in half an hour or less. If, on the other hand, this little operation is not permissible, there is nothing to do but undertake three or four days' treatment, based on general principles, consisting in cathartics, preferably podophyllin or cascara, rest in bed, and cold or hot applications. Cocaine he has not found always satisfactory, though it does sometimes work to a charm. Among the wet applications, either hot or cold, his preference is for some preparation of witch-hazel or the common hospital lead and opium.

Last, and not least, is the time-honored suppository of opium and belladonna, so dear to the hearts of the medical profession. This is the recognized hospital treatment in New York and covers all cases of pain from any cause whatsoever, when the lesion is low down, in reach of the anus, but in severe cases rest in bed with catharsis accomplishes far more in a given time.

More painful still, and more difficult to handle, is that complication of marginal hemorrhoids known as fissure. It is most usually found posteriorly in the median line, overlapped by a fold of protruding hemorrhoid. Here, again, comes up the question of operation. For the most part when the writer finds a case of this sort that does not respond to the general treatment just laid down, he strongly advises giving ether, stretching the sphincter, cutting the fissure, and removing the hemorrhoids, thus radically curing at once an old chronic disease. Next best is the treatment already mentioned, when enforced as vigorously as possible.

Not infrequently these fissures heal quickly under local applications of nitrate of silver not stronger than 20 grains to 1 ounce, repeated not oftener than once in twenty-four hours; while, on the other hand, the solid stick is very apt to convert a small tear in the mucous membrane of the anus into a chronic, intractable ulcer. The temptation to use morphine in very severe, prolonged pain is great, yet the harm it does in these cases is not to be forgotten. Admitting the truth that constipation is the direct cause of acute symptoms in chronic rectal dis-

eases, we have no doubt in saying that a three or four days' course of morphine will reconcile almost any patient, no matter how timid, to either death or operation, after the first passage over an "intolerable" fissure. Verily, "constipation is the thief of time." A less frequent cause of pain, as a symptom of piles, may be seen when a mass of tumors prolapses and remains outside of the body, swollen, red, and perhaps gangrenous. Here the same procrastinating treatment will, in a week, more or less, help to diminish the acute symptoms. To summarize: In order of importance, rest in bed, unloading of the bowels, sensible diet, abstinence from alcohol, and an abiding faith on the part of the medical attendant that subsequent and severe attacks will induce a great sufferer to submit to an operation involving no pain or risk to life, with a guarantee of no more trouble.

The second symptom already spoken of is hemorrhage, usually accompanying the act of defecation, and varying from a few drops to an ounce or more. Most people do not bother with "a little thing like this," simply because it entails no pain.

On the first occurrence of bleeding, many patients are more or less frightened, until they have assured themselves that they have "nothing but piles," and let it run on indefinitely, except in those rare cases when the loss of blood begins to reach the point of exsanguination; but the majority of cases are allowed to continue or stop spontaneously. Hemorrhage, whether profuse or not, can be easily controlled, if the bleeding spots or area can be seen, by careful applications of nitric acid, or by touching with the Paquelin or galvano-cautery. There is no pain unless the skin margin is burned, and one application should be sufficient. Of course, any destruction of healthy mucous membrane does harm, and the cauterization should be superficial and limited to the bleeding-points or areas. Such cases as require etherization and ligation the author has read of, but not seen.

Prolapse of internal hemorrhoids occurs in advanced cases where the tumors are large and flabby. Whether they return to the cavity of the rectum with or without assistance after defecation, this symptom causes but trifling annoyance. It is not till the sphincter becomes somewhat relaxed and allows protrusion at any time, on standing or walking, that any real distress occurs, and this brings us back again to the subject of pain and what to do for it. In these severe cases local treatment is not very promising. Local applications or cauter-

ization, thorough reduction, and laxatives are worth trying, especially if re-enforced by a few days' rest in bed. If these fail, there is nothing but operation. Last and worst of all are cases of prolapsed hemorrhoids that refuse to be returned, become gangrenous, inflamed, and extremely painful. There is then absolutely nothing to do but rely on the rest cure and wait for the sloughing to destroy enough tissue to allow retraction and contraction.

The general principles already laid down are to be applied in the many nervous reflexes so common to all rectal diseases: symptoms referred to the bladder, urethra, ovaries, intestinal tract. After successfully quieting one or all of the symptoms of which we have spoken in such detail, there is nothing so useful as a local tonic as cold water applied to the perineum twice a day with a bath sponge; better than any suppository or astringent, used copiously, not inside the rectum, but outside of it. We have omitted all mention of carbolic-acid injections, for the reason that this method of treatment is in its true sense a surgical operation devised for the purpose of doing away with venous tumors, and liable to all the dangers and complications of cutting with knife and scissors, such as great pain, infection, abscess, sloughing to any extent, and secondary hemorrhage. Were we discussing operative measures it would have to take its chance with the ligature, the clamp, and the cautery. Summing up in a few words, the non-operative treatment of hemorrhoids comes down to general medication of some predisposing cause and local applications to relieve individual symptoms.

#### GLYCOSURIA FROM TAKING THYROID EXTRACT.

W. DALE JAMES (*Brit. Jour. Derm.*, June) reports the case of a medical man, aged forty-five, and an "old psoriatic," who had taken thyroid extract before Christmas without any effect on the disease, probably owing to the small doses swallowed,—one tabloid twice a day. On March 22, 1894, he began taking four tabloids daily, and at the end of a week complained greatly of depression, with frequent flushings and palpitations. The nervous symptoms increased, and the patient felt and looked a very old man. Before another week elapsed his thirst became unquenchable, the quantity of urine greatly increased, the breathing became embarrassed, the pulse rose to 132 per minute, and the smell of acetone was detected in the breath. On April 4 the urine had a specific gravity of 1032, and sugar was freely found by

all tests. The thyroid treatment was at once stopped and antidiabetic diet adopted. The quantity of sugar decreased daily, and on April 13 none could be detected. The general condition steadily improved, and on April 30 the patient was quite well, except for the psoriasis, which had not improved. Polyuria following the administration of thyroid has been noted more than once, but, as far as the author has been able to ascertain, this is the first case in which glycosuria has been caused by the treatment.—*British Medical Journal*, August 4, 1894.

#### THE TREATMENT OF SCIATICA.

GRAEME HAMMOND, in discussing the treatment of sciatica in the *Post-Graduate* for September, 1894, states that the pain of sciatica varies in accordance with the severity of the disease. In mild cases from 10 to 15 grains of phenacetin will afford prompt relief, but in the majority of cases the anæsthetic properties of this drug fall far below what the patient requires. If the pain is moderately severe or intense it is better to inject morphine. Enough morphine should be given in one dose, if possible, to thoroughly arrest the pain. It has been claimed that the morphine should be injected directly into the sciatic nerve, because it not only relieves pain, but also exerts a beneficial effect upon the inflammatory process. There is no proof that morphine possesses any such power. The writer has injected it repeatedly into the sciatic nerve in many cases, but never observed that it had any antiphlogistic properties. Puncturing the sheath of the nerve in a number of places by piercing it with a needle has in some instances afforded relief. This is accomplished by permitting the serum which is poured out between the sheath and the nerve to escape through the puncture made by the needle, thus relieving the pressure and consequently the pain.

Having made the patient comfortable, the neuritis is best treated in the following manner: Absolute rest of the afflicted leg cannot be too strongly advocated. Mild cases of sciatica sometimes get well in spite of this rule being flagrantly violated, but the course of every case will be shortened and, in many instances, the disease will be prevented from becoming chronic by the rule of absolute rest being strictly enforced. The patient should not only be confined to bed, but the leg must be made almost immovable by being confined in a splint. The author prefers the old-fashioned hip splint, as recommended by Weir Mitchell. A piece

of board about three inches wide and long enough to reach from the axilla to the sole of the foot should be properly covered, and then applied by attaching it to the body by a few turns of a bandage, and in the same manner to the leg from the knee to the foot and from the knee to the hip.

Having thus secured almost perfect rest for the inflamed nerve, the next most important feature of the treatment is the application of heat. The most common seat of the neuritis is in the upper part of the nerve, from its exit from the pelvis to the middle third of the thigh. Hot-water bags should, therefore, be placed under the back of the thigh and kept there continuously until all signs of inflammation have ceased; the constant electric current is also very serviceable in relieving pain. In almost all cases patients will speak of the improvement they feel after each application. A large electrode, fully the size of the foot, should be fastened to the sole of the foot by straps or elastic bands. Another large electrode, fully six inches square, should be placed under the hip while the patient is reclining. This electrode should be connected with the positive pole, the one on the foot with the negative pole, and the current should then be gradually turned on, being careful not to break the circuit until the patient is receiving enough to give rise to a moderate sensation of burning. The current may then be allowed to flow uninterruptedly for about five minutes, and should be gradually diminished until it is taken off entirely. This ought to be repeated daily, and in severe cases it can be used advantageously twice a day. By these three methods—absolute rest, continuous application of heat, and daily applications of galvanism—the most severe acute cases will promptly yield, the average cases not lasting longer than seven or eight days. At the end of that time treatment can be discontinued, but the patient should remain in bed two or three days longer. If, in that time, he can move the leg without pain, he may then be allowed to walk a little and to gradually increase the distance until further restriction becomes unnecessary.

#### *THE VALUE OF AN ETHEREAL SOLUTION OF IODOFORM IN THE TREATMENT OF HEMORRHOIDS.*

BECK contributes a paper on this subject to the *New York Medical Journal* of July 21, 1894. After considering the great absorbent power which iodoform dissolved in ether exerts in such conditions as cysts, lymphomata, goitre,

etc. (hydrocele, also, in which the writer has recently employed it successfully), where a shrinking process of the tissues is intended, he was induced to try its effect in the treatment of hemorrhoids, and the good results which he has obtained in eight cases encouraged him to recommend this remedy to the profession, although he is well aware that the small number of cases, as well as the short time which has elapsed since the operations were performed, may impair to some extent confidence in the new method.

The operation is done in the following manner: After having prepared the patient by cleansing the bowels thoroughly with repeated irrigations of a solution of salicylic acid about fifteen minutes before the operation, a suppository containing two grains of cocaine and from a quarter to a third of a grain of morphine is introduced into the rectum. If the patient is extremely sensitive at the beginning of the operation, a one-per-cent. solution of cocaine should be injected into different portions of the mucous membrane, but practically he has never found this to be necessary. It may predispose the patient to hemorrhage.

After the introduction of an iodoform-gauze tampon through a small speculum, the tumors are brought into view without grasping them with a forceps. Two drops of a saturated solution of iodoform in ether are then injected into the cellular tissue adjoining each nodule. Injecting this on both sides of the latter causes a formation of scar tissue and a shrinkage of the circumvenous tissue. If the cocaine-morphine suppository has been introduced at the proper time, the pain following this procedure is very slight and passes away in a few moments. In place of the gauze tampon, a suppository containing 2 grains of salicylic acid is now substituted, and bismuth and opium are given to prevent a movement of the bowels.

On the third day 2 ounces of olive oil are injected into the rectum, and castor oil is given per os. During the subsequent weeks great care should be taken to keep the bowels loose. This operation does not prevent the patient from attending to his daily work.

No bad effects have followed, such as sepsis, abscess, ulceration, embolus, hemorrhage, and stricture or fistula, and no relapse has yet occurred in any of his cases. If no obliteration but contraction should take place in a large hemorrhoid, he would repeat the operation.

The following advantages are to be derived from the injection of iodoform dissolved in ether: 1. The operation can be performed without assistance, thus materially lessening

the expense, which to many patients is an important item. 2. Iodoform, being a strong antiseptic, is certainly fitted to prevent supuration or possibly sepsis, and differs considerably from the much-used carbolic acid, which, if employed in the requisite strength, acts as a caustic. 3. As the nodules themselves are not touched, but only the circumvenous tissue, it is evident that embolism, which follows the use of carbolic acid and other liquids, cannot occur. (Death due to the injection of carbolic acid is by no means a rare occurrence. In a case of the writer's, after he had injected a ten-per-cent. solution of carbolic acid into three small nodules in a young woman, a temperature of 106° F. set in ten hours afterwards. On the following day icterus developed, but fortunately disappeared two weeks later, leaving the patient in a very weak condition for several months.) 4. No contraction takes place, such as follows the use of the cautery. 5. The patient can resume his work at once.

Seven months ago he used this treatment in the first case, five months ago in two cases, and four months ago in another case, and in all the hemorrhoids have disappeared. The four remaining patients, who are doing well, were treated between one and three months ago.

Beck has had no opportunity of employing this method in treating so-called thrombotic and capillary hemorrhoids, but there is no reason why it should not yield to it.

In one of the cases mentioned the patient had prolapsed and large tumors, and this injection was used with good results, although the sphincters were contracted. If he had failed, Whitehead's operation would then have been performed. Among the other cases, two of the patients had internal and five external hemorrhoids, and, although in two cases there was inflammation, the injections were well borne and successful.

From a strictly surgical point of view, Whitehead's operation is the ideal one. But it should not be forgotten that it can be done only when good and sufficient assistance is obtainable; furthermore, it confines the patient to his bed for at least two weeks. What this means to a poor workingman every physician knows, and in New York City, where, on an average, every fourth adult suffers from hemorrhoids, such points have to be taken into consideration.

In reference to their frequent occurrence, it may be said that it was quite customary in Germany to call hemorrhoids "the American disease" before America had enlightened the Old World about appendicitis, which is now hon-

ored with this term. There is some truth in this, for the busy and enterprising American citizen, in his haste to become rich, does not seem to pay sufficient attention to the ordinary laws of health.

Since writing the above article the author has operated in four other cases with the same good results. He has also tried the same injection in the circumvenous tissue in two cases who had suffered from varicose veins of the legs for twenty-seven years. Perfect recovery took place when he had injected at eight different points. In a case of varicocele in which he tried the injection in the same manner the result is still imperfect, probably because he used too small a quantity of the solution.

#### *A FEW APHORISMS RELATING TO OBSTETRICS.*

What to do and what not to do in the management of labor, that is the question.

No branch of a physician's practice requires more self-poise, and where so many complications arise, commanding our sympathy and demanding our skill, as that of obstetrics, and when disease and death follow a normal case of labor, the cause can be traced to none other than to ignorance or mismanagement.

With these preliminary remarks, Ewing advances a few aphorisms relating to obstetrics.

1. Examine the urine a week or so before the expected confinement. Albumin need not cause alarm, unless present in large quantity, in which case the woman should be restricted to milk diet, given  $\frac{1}{10}$  grain of sulphate sparteine four times a day, and bowels kept open with cream of tartar, the object being of course to relieve congestion of the renal veins.

2. Make no digital examination without first cleansing the hands and nails, together with the external genitals, with a solution of bichloride of mercury (1 to 2000) and ethereal soap.

3. Empty the rectum thoroughly with an injection of warm water.

4. Make as few examinations as possible during progress of labor, and each time dip the hand first in the antiseptic solution.

5. If presenting part emerges slowly from the womb, do not allow your impatience to so get the better of your judgment as to induce you to "assist nature" by pulling upon the os. Probably all the deep pathological tears, calling for surgical interference, found on the right and upper anterior sides of the cervix, are caused by the finger of the accoucheur.



6. If "pains" are sluggish, change the position of the patient.

7. Do not rupture the "bag of waters" too soon, as it, when intact, favors the posterior rotation of the face.

8. Should a posterior rotation of the occiput occur, and nature fail after a reasonable length of time to effect a delivery, apply the forceps and turn the occiput to the front by rotating either to the right or left, as the position of the babe would indicate. This manoeuvre of the forceps can be executed without danger if care be exercised, turning the head not more than a quarter of a circle at a time, then pausing a moment for the shoulders to follow. After this is accomplished the instruments should be removed and reapplied.

9. In making traction on the child's head with the forceps, unlock them about every thirty seconds, else the engorgement produced by continued pressure of the instruments might cause a hæmatoma of the brain or dura.

10. To prevent a rupture of the perineum.

When the occiput is emerging from the vulva, remove the right hand from the forceps and with it support the soft parts, while with the left you continue slight traction upward until the bridge of the nose reaches the anterior border of the perineum, when the instruments are quickly removed. Now, in order to avoid a rupture, especially if an expulsive effort is being made, hold the head in *statu quo* until a relaxation takes place; then, with the thumb and first two fingers of the right hand, push the perineum down and under the chin, allowing it to rest on the palmar surface of the fingers. The next pain will expel the head, which is grasped by both hands and pulled upward, delivering the under shoulder first.

11. Should a rupture occur, repair the injury at once, using the large iron-dyed silk.

12. Do not become impatient if the placenta does not follow quickly, but wait, say a half or even an hour, before an attempted forcible delivery is made. Should, however, a violent hemorrhage occur, empty the uterus at once, by disinfecting the hand, introducing it into the womb, detaching the placenta, and allowing it and the hand to be forced out together.

13. The source of uterine hemorrhage following labor arises almost always from the open and now no longer useful utero-placental vessels. Nature, ninety-nine times out of a hundred, prevents hemorrhage arising from this source by filling up these tortuous vessels and plastering over their open mouths with coagulated blood. Therefore,—

14. Do not use Créde's method, and for two

reasons: first, that the act of squeezing out the placenta dislodges at the same time from the anfractuositities and vessels this plastic coagulum, inviting streamlets of blood to follow the non-pressure of the hand, causing in all probability a hemorrhage instead of preventing it. The second reason is, that a hemorrhage following after this method of forcible expulsion, necessitating, as it usually does, a constant hand-pressure over the uterus for half an hour or more, while it may not prevent absolutely the reformation of nature's cement, would cause paralysis of the contractile fibres of the womb, rendering them incapable of responding to the stimulus of ergot or to anything else.

15. For these passive hemorrhages, where so soon as the hand is removed the hemorrhage goes on, the writer relies on 1 teaspoonful of laudanum rather than 2 or 3 of ergot.

16. After the birth of the child, gently knead the abdomen with the finger-tips of the left hand, using barely force enough to feel the uterus beneath. This gentle friction excites uterine contraction far better than rough massage, expelling the placenta almost as quickly, and is rarely, if ever, followed by unpleasant hemorrhages or after-pains. This slight finger-pressure should be continued a short time after the placenta is expelled.

17. In early abortions, before atrophy of the blood-vessels of the mucosa takes place, the hemorrhage comes greatly from this engorged mucous membrane instead of entirely from the placental surface, as in full term. To stop it, do not use ergot or compression, but approximate the inner surfaces by removing the decidua with the placental forceps and dull curette. This is to be followed by a hot antiseptic (preferably carbolic acid) intrauterine douche.

18. Have the vulva kept well covered with sublimated cotton to catch the lochia and prevent infection; and, in addition, if a clean and competent nurse is in attendance, order given night and morning, for five days, warm antiseptic vaginal douches.

19. Wash the babe's eyes the moment it is born, and in dressing the navel use borated cotton saturated with glycerin.

20. Restrict the diet the first three days only, after which have the bowels moved either by an enema or the compound licorice powder. (If there is much flatus, use instead a full dose of castor oil and turpentine.)

21. Keep the woman in bed two weeks, if possible, and the first four days give a capsule containing  $\frac{1}{2}$  grain of ergotin and  $2\frac{1}{2}$  grains of quinine, morning, noon, and night. This

tends to prevent fever and hastens the process of involution.

22. If surgery is your specialty, and you are called to a case of confinement, use extra precautions in cleansing the hand and nails; in fact, it would be wise, if your practice in surgery is extensive, to let obstetrics alone.—EWING, in *Medical Record*, July 21, 1894.

#### STIMULANTS.

In the course of an article upon "Feeding after Weaning," in the *Medical Record* of July 21, 1894, STOWELLS points out that the testimony of physicians is almost unanimous against alcohol for children in health. The small percentage of sugar or oxidizable material in wines and beer is more than offset by the injuries to digestion and the nervous system. All the best men use stimulants guardedly, even in infantile disease. Tea and coffee have a very considerable value in checking tissue waste, and indirectly supplying nitrogenous matter and salts; but these virtues are entirely counterbalanced by the ill effects of tannin and thein, the one causing colic, etc., the other making the child nervous, fretful, and peevish. Still, the children of the poor consume great quantities of both.

In regard to feeding, he says,—

In arranging a dietary, regard must be had for season, cold or hot climate, sluggish or active temperament of the child, etc. The exact weight or exact age of the child is not a proper criterion. Two atoms of hydrogen unite with one of oxygen to form a molecule of water; but you cannot be sure that a given number of grains of nitrogen will produce a definite number of foot-pounds of force, or that so much sugar will produce so many heat units.

It is often forgotten that the child needs a large amount of water, even if his diet be chiefly fluid.

The following dietary may serve as a basis for directions to parents and nurses:

#### FREQUENCY AND SUBSTANCE OF MEALS.

7 A.M. (a) Milk. (b) Milk and rusk.

10.30 A.M. (a) Oatmeal or barley in milk; sugar or malt. (b) Beef-tea.

2 P.M. (a) Egg in milk, sweetened. (b) Stale bread and milk.

5.30 P.M. (a) Milk and cracker or zweibach. (b) Milk and oatmeal or barley.

10 P.M. (a) Milk. Total milk, one and a half pints.

#### ONE YEAR TO ONE AND A HALF YEARS.

7.30 A.M. (a) Rusk or cracker and milk; (b) Soft-boiled egg; milk; orange.

11 A.M. (a) Milk; bread and butter. (b) Baked potato; milk.

2 P.M. (a) Beef-tea; light pudding. (b) Bread, butter, bread in meat gravy from a roast. (c) Meat, roast, to suck on.

5.30 P.M. (a) Bread and milk; prune juice. (b) Cocoa; custard.

10 P.M. (a) Milk, if awake. Total milk, two pints.

Two later periods in childhood deserve a moment's consideration.

At the sixth or seventh year, when the deciduous teeth fall, the child must be urged to chew his food thoroughly. If he begins to attend school, that will form an excuse for bolting meals.

Still later, at puberty, unusually rich or highly spiced food should be avoided, lest it increase sexual excitement in the immature.

Bring up the child from the beginning to eat slowly and at regular times as much as he wants. The rules of time and quantity will be on a sliding scale in different families. In feeding infants, as in the whole practice of medicine, we must fix the principles and prescribe with common sense, according to the case in mind.

#### THE MORPHINE HABIT.

In concluding an article on this subject in the *Montreal Medical Journal* for July, 1894, MANN states that the opium or morphine habit is a curable disease, and the writer only desires to know that an opium sufferer honestly desires a cure to assure him that this result can be accomplished. There is no disease that yields a better percentage of cures to the proper treatment. Primarily, the patient must put himself under the necessary control, and must desire a cure himself.

The nervous system of most persons is too delicate to bear the shock of a total deprivation of the morphine at once. Grave nervous disorders follow such a course. In the writer's plan of treatment he employs a reductionary course of treatment, keeping the patient's nervous system quiet with a combination of the bromides, gradually increasing the bromides as he decreases the morphine until, on the tenth day after admission, his patient is taking no morphine and has avoided all suffering and nervous prostration. For a tonic during this first period of treatment he uses the elixir of gentian with the tr. ferri chlor. He generally

combines the bromides of ammonium and sodium, and eliminates them from the system after he stops the morphine by warm baths, sweet spirits of nitre, and digitalis. The reflex action of the spinal cord, which has purposely been kept depressed by the bromides during the reductionary treatment, is now excited by strychnine, and the central nervous system is stimulated and invigorated by the daily use of the induced or faradic current of electricity as general faradization. To obviate any psychosomatic suffering after withdrawal, he uses nitro-glycerin ( $\frac{1}{100}$  grain) by the mouth, while at the same time he gives a hypodermic injection of  $\frac{1}{4}$  to  $\frac{1}{2}$  grain of sulphate of sparteine. He uses this for perhaps two or three days after complete withdrawal.

#### ECK'S OPERATION.

In the *Lyon Médical* for July 1 there is an editorial article signed by M. R. LEPINE, headed, "Is a Wound of the Portal Vein necessarily Fatal?" The writer remarks that the trunk of the portal vein, by which the blood coming from the spleen, the intestines, the stomach, etc., is conveyed, is, as it is well known, only a few centimetres long. On reaching the hilum of the liver it divides into two great terminal branches, one of which is directed to the right and the other to the left; according to Testut, these two branches look as if they formed but one vessel in the transverse fissure of the liver. M. Lepine does not hesitate to affirm that a wound of this vein, whether of the trunk or of one of these branches, is fatal unless it is a mere puncture. The circulation of blood in the portal vein is extremely active, even during a fast. Besides the great amount of blood which passes through the vein in a given length of time, we must take its tension into account; it is evident that the higher the tension, the orifice of escape being the same, the more considerable will be the amount of blood lost, on account of the greater rapidity of its flow. Now, the tension of the blood in the portal vein far exceeds the general venous tension, on account of the interposition of the capillaries of the liver.

In case of puncture, asks M. Lepine, is lateral ligation possible? If the puncture involved the trunk itself, he says, such a ligation might be attempted, in spite of the difficulty of its execution, and it is conceivable that it might save the patient. But the operation does not seem practicable upon either of the two branches. The absolute impossibility

of such a procedure when the wound of the vein is situated not on the free portion of the vessels, but upon that aspect which is hidden in the liver, will readily be understood. Let us suppose, the writer goes on to say, a large wound of one of the two terminal branches, let us premise that it is visible, and let us admit that it is possible to tie the vessel above and below the wound; this double ligation would certainly stop the bleeding, but it would also bring about, on the one hand, an interruption of the circulation in one of the lobes of the liver (that is to say, a suppression that could not be ignored of the function of a considerable portion of the organ); and, on the other hand, a notable embarrassment of the circulation in the portal vein (that is to say, a great increase in the volume of the spleen, extreme congestion of the intestinal mucous membrane, etc.). Could life be preserved, M. Lepine asks, with such derangement of the function of the liver and of the other abdominal organs? There is no experience upon which an answer to this question can at present be based. As to the sudden total interruption of the course of the portal blood by reason of compression or extemporaneous ligation of the trunk of the portal vein, it is incompatible with life. Dogs succumb to it in two hours, and sometimes much sooner. At the autopsy the mesenteric veins are found gorged with blood and the spleen is of colossal size.

If, in the case of ligation of the portal vein, death is owing in part to stagnation of blood in the splenic and mesenteric veins, would it be possible to avoid it by causing the peripheral end of the portal vein to form a junction with the inferior vena cava? Such an operation was proposed by Eck, a Russian surgeon, and quite recently Professor Queirolo, of Pisa, has materially perfected its technique in certain respects, and thereby rendered the operation comparatively so easy, at least in the dog, that, although not a surgeon, M. Lepine has practised it several times lately for a special purpose,—that of suppressing the physiological function of the liver. He describes the method as follows, saying that it is almost exactly that which Queirolo has described: An incision is made through the linea alba from the xiphoid cartilage to within a few centimetres of the pubes. The operator, stationed at the left, draws the intestinal coils out and to the left and exposes to view the inferior vena cava, which is tied between the abouchment of the renal veins and the junction of the common iliacs. At the point where the renal veins empty, the vena cava is compressed with a broad clamp, and it

is then cut between the clamp and the ligature. Then the vena porta is isolated and tied as near as possible to the hilum of the liver. At a point a few centimetres above a broad clamp is fixed and the vein is cut near the ligature; the lower end is inserted through a ferule shaped very much like a napkin-ring, and is folded back over the ferule in such a way that the lining membrane constitutes the exterior. The vein, thus disposed upon the ferule, is tied; then the whole is passed into the upper end of the vena cava and tied, so that there now remains nothing to be done but to remove the two broad clamps to cause the portal blood to flow into the vena cava. In consequence of the apposition of the lining membranes a solid scar might ultimately be formed.

Such, so far as regards its essential features, is this operation, which may easily be performed upon a dog in half an hour. Unfortunately, says M. Lepine, its results are generally fatal, so that, even if it has been simplified, Eck's operation still remains grave. The writer remarks that it would lead him too far to go into an analysis of the causes of death. Eck's idea, he says, was that the operation might be useful in certain cases of cirrhosis of the liver, but it is very doubtful, he thinks, if anybody will ever feel justified in resorting to it in cirrhotics; assuredly it could not be made use of in cases of wounds of the portal vein, for there would be no time to perform it.—*New York Medical Journal*, July 21, 1894.

#### THE ELECTRICAL TREATMENT OF UTERINE FIBROIDS AND SUBINVOLUTION.

As the result of a series of thirty cases treated by HAULTAIN (*Edinburgh Medical Journal*, August, 1894) within the last three years, on which he made accurate and careful observations, during and after treatment, he decides that:

1. The constant current is of the greatest value as a uterine hæmostatic when bleeding is due to small fibroids and subinvolutions.

2. It is curative in most cases of endometritis.

3. It reduces measurably the size of a certain proportion of fibroid tumors, while upon the majority it has a salutary, though less decided, action.

4. Its action on fibroids larger than a seven months' pregnancy is not curative, but temporarily palliative.

5. It reduces the size of subinvolved uteri.

6. Beneficial constitutional effects are usually noted.

7. Its method of hæmostatic action is both local and interpolar, the latter being probably the most potent.

#### TREATMENT OF ANAL TAGS.

In considering the treatment of this condition, the causes and possible results must be remembered. The superficial ulcer, although itself in many cases a source of slight discomfort, may afford an entrance to septic or tubercular material, and be the forerunner of serious trouble.

HORROCKS (*Quarterly Medical Journal*, July, 1894) states that the treatment of the superficial or callous ulcer is essentially the same. Rest for the ulcer must be obtained by thoroughly stretching the sphincter and dividing the fibres of the muscle which lie immediately beneath the bed of the ulcer. The granulating surface of the ulcer must be well scraped with a sharp spoon, and search made for any sinus running from its floor. Lastly, the projecting anal tag and loose folds of skin about the anus must be clipped away.

#### A MODIFICATION OF PIROGOFF'S AMPUTATION.

LE MOYNE (*Philadelphia Polyclinic*, August 4, 1894) calls attention to a modification of the above operation as employed by himself. Syme demonstrated the utility of forming a serviceable flap for ankle amputation by utilizing the dense, thick skin of the heel, already inured to pressure by natural use. Later, Pirogoff modified the operation of Syme by retaining the posterior portion of the calcaneum and incorporating it in the heel flap. In both Syme's amputation and Pirogoff's modification the lower extremities of tibia and fibula were removed. About fifteen years ago the author decided that an additional modification would be advantageous, this consisting in retaining the extremities of the tibia and fibula, and thereby avoiding considerable shortening, necessitated by the original method. In his first case the fragment of calcaneum was found too wide to enter the space between the malleoli, and entrance was gained by the removal of sufficient tissue from the inner aspect of each malleolus. The result was so good that he was very favorably impressed with the operation. Later he had an opportunity to put his modification into practical operation. The flap was formed according to the method advised by Pirogoff, except that the calcaneum was sawed less obliquely. The section of calcaneum being much wider

than the intermalleolar space, an excavation was made on each side, corresponding to its respective malleolus, and the parts accurately fitted to each other until coaptation was complete. Even with the admirable purchase afforded by that device, there was a tilting of the anterior border of the fragment, which was entirely overcome by the complete division of the tendo Achillis.

The stump was dressed with a long posterior splint and well padded forward at its inferior extremity. Primary union occurred, except at the location of one stitch, where there was slight suppuration. Five weeks from the date of the accident bony union was complete. The tissues of the stump seemed firm and healthy, and sustained the entire weight of the patient without discomfort or inconvenience.

#### GLYCERIN INJECTIONS AS AN OXYTOCIC.

PELZER (*British Medical Journal*) read a communication on this subject at a recent meeting of the Cologne Obstetrical Society. He had collected twenty-eight cases, including nineteen in his own experience. Glycerin was used eighteen times for induction of premature labor; in fifteen of these cases the pelvis was narrowed, in two there was Bright's disease, and in one placenta prævia. To stimulate uterine action at term, glycerin was injected in seven cases of simple atony, in two of placenta prævia, and in one for some other complication. The pains came on after an average interval of two hours following the injection. Eight to ten hours elapsed before complete dilatation of the os, or a longer space of time in cases of contracted pelvis. Two of the mothers died, both from severe eclampsia; the foetus was putrid in both cases. One child required craniotomy on account of its great size. Three children died from placenta prævia and strangulation by the funis; one, hardly twenty-two weeks old, died a quarter of an hour after birth. Only in one case could the violence of the pains be a possible cause of the death of the child. The glycerin had done its duty. Pelzer, however, deprecates injudicious zeal in the application of this method; an ounce to an ounce and a half, not three ounces, are sufficient for injection. The method is not suitable for cases of eclampsia and placenta prævia, except the lateral variety, where the placenta can be avoided.

GEUER (*ibid.*) read notes of three cases of induction of premature labor by injections of glycerin, in all of which both mother and child were saved. The first two mothers were

over thirty-two, with contracted pelvis; craniotomy had been performed in previous labors. The third case was an instance of bad eclampsia; 3x of glycerin were injected, the os being at the time uncontracted; there was oedema, with much albuminuria; forty hours later a healthy living child was born.—*Maryland Medical Journal*, August 4, 1894.

#### CHRONIC INFLAMMATION OF THE SEMINAL VESICLES.

Chronic inflammation of the seminal vesicles is not always easy to make out, as it has symptoms like inflammations of the urethra. ALLEN, in the *Medical News*, says that there may be a chronic urethral discharge, with shreds in the urine, or there may be vesical irritability with frequent micturition. In many cases there is some disturbance of the sexual function. In considering this subject the author offers the following suggestions:

1. The fluid in a distended vesicle, subjected to pressure, would escape at the point of least resistance, which would be the natural outlet, no matter how tortuous, unless the wall of the vesicle were ruptured by violence. Simple pressure on such a blind sac would seem better than an attempt to strip the vesicle down towards the duct.

2. The slow and unsatisfactory progress of a few cases may be due to the difficulty of emptying such portions of the vesicle which may in these cases be the chief seat of disease.

3. In some cases the ampulla of the vas deferens may alone be affected, when the stripping process would be easy and effective.

4. Disease of the vas deferens may possibly be of more importance than that of the vesicle itself, obstructing, as it does, the direct road from the testicle.

5. Simple massage of the vesicles may play an important part in the treatment.—*Maryland Medical Journal*, August 4, 1894.

#### TREATMENT FOR PAINFUL DEFECTION.

For painful defecation attending inflammatory pelvic conditions, DR. MURRAY (*Norsk Magasin* for Loegevid) recommends the following:

- R Bismuth subnitrate, gr. iiss;  
 Mercurial ointment, gr. iss;  
 Extract of belladonna, gr. iv to gr. v;  
 Cacao butter, q. s. for 1 suppository.  
 Sig.—2 suppositories a day.

The bismuth is added to prevent irritation of the mucous membrane of the rectum.—*Medical and Surgical Journal*, August 4, 1894.

#### VOMITING OF PREGNANCY.

A writer in the *Lancet* says, "I have not failed once for many years, by a single vesication over the fourth and fifth dorsal vertebræ, to put an end at once to the sickness of pregnancy for the whole remaining period of gestation, no matter at what stage I was consulted. The neuralgic toothache and pruritus pudendi of the puerperal condition yielded as readily, and to one application."—*Medical and Surgical Journal*, August 4, 1894.

#### IVY-POISONING.

A current number of the *Sanitarian* advises the application of Labarraque's (solution of chlorinated sodium) solution in this irritating affection. It should be applied in full strength by means of a pledget of lint or diaper cloth kept constantly wet with the liquid; it will afford relief immediately.

#### SEPTIC OSTEITIS IN CHILDHOOD.

A lecture on this subject was recently delivered by MR. EDMUND OWEN at the London Hospital for Sick Children, and is reported in the *Lancet* for May 26. Mr. Owen believes that a diagnosis of rheumatism is sometimes erroneously made, when the condition present is, in fact, osteitis due to some septic infection. This may occur without a history of local injury, but usually some illness has seriously disturbed the patient's nutrition. In such circumstances all the tissues of the body are rendered uncommonly susceptible to infection, and it is not strange that the delicate new bone at the end of the diaphysis should suffer. Any septic micro-organisms which have gained entrance into the body might readily implant themselves in this region of slight resistance. Here they would undergo prolific cultivation, secreting their ptomaines to poison the blood and disturb the nervous system. Two cases were presented illustrating this condition. In neither case could a satisfactory cause be discovered. Sometimes the disease is acute and fulminating, and carries the child off before a diagnosis has fairly been made. In others, as in the cases mentioned, it is slow, and simulates articular rheumatism in many respects. Unlike rheumatism, however, the heat, the swelling, the pain,

and the tenderness, although close to the articular area, do not involve it. The tenderness is limited to the region of the bone close below the junction cartilage, and at this point there is a definite thickening. In articular rheumatism the swelling, the fulness, and the redness are confined to the area of the synovial membrane, and there is no thickening about the bone; the results of treatment also aid in diagnosis. The relief of the symptoms of acute rheumatism is, as a rule, so prompt under the use of salicylic acid that an increase in the severity of the articular signs, or even a lack of any improvement after a few days, should arouse suspicion and call for a more thorough and careful investigation. The diagnosis should be made as promptly as possible, for error and delay lead to lamentable results. The treatment is essentially surgical. Incision should not be delayed until the presence of pus is demonstrated. Delay allows the septic inflammation to make irremediable havoc, so that the sooner the area of disease is attacked and cleared out the better. To wait for fluctuation is to give the staphylococci and other micro-organisms full opportunity to do their worst. The incision should be through the periosteum, and, if any pus is here confined, a free opening should be made. The diaphysis should be trephined to give free exit to all septic matter pent up within the bone.—*New York Medical Journal*, August 4, 1894.

#### SPLENECTOMY.

CONKLIN (*Medical Record*, July 28, 1894) reports a successful splenectomy. The patient, Mrs. A., American, aged twenty-nine, married, multipara, was admitted into St. Elizabeth Hospital, May 29, 1893. Her family record is without taint, menstruation normal, and general health but little impaired. Mrs. A.'s early life was passed in a highly malarious district in Southern Illinois, and up to her marriage and removal to Ohio she was subject to frequent attacks of chills and fever, and carried almost constantly an "ague cake" in her side. She had been free from malaria for several years, and, aside from an attack of typhoid fever, has had no serious acute illness. Two years before she began to have abdominal and pelvic pains, and some months later discovered a lump low in the abdomen. Examination disclosed a solid, freely movable tumor, sensitive to touch, in the left iliac region, dipping into the pelvis, but not connected with the uterus, and a small cyst of the right ovary. The uterus was normal in size, but retroverted.

Dr. Jewitt made a *cœliotomy* June 10, 1893. The solid tumor proved to be a displaced spleen about twice the normal size. It was free from adhesions and easily replaced. The right ovary, containing a cyst the size of a small orange, was removed; left ovary normal; convalescence was uneventful. She was soon discharged, with positive instructions to wear constantly a properly fitting abdominal supporter, with the hope of retaining the spleen in position.

Mrs. A. was readmitted into the hospital during the author's service, September 23, 1893. Shortly after her return home she again began to suffer from pelvic symptoms, and for the past two months had nearly continuous abdominal soreness and several severe paroxysms of pain, which drove her to bed. Her abdomen had been steadily enlarging.

Six days ago, while doing the family washing, she was seized with agonizing pain in the abdomen, which required for its control the administration of morphine. Vomiting of large quantities of bile-colored fluid began on the following morning, and still recurred. In spite of treatment, the bowels refused to move for more than a week; temperature normal.

On examination, the abdomen was found tympanitic, very sensitive to pressure, and occupied by an immovable, solid tumor, which completely filled the left side from the pelvis to the ribs and extended considerably beyond the middle line; it could easily be touched per vaginam.

The former operation greatly simplified the diagnosis, and left no doubt that the tumor was the enlarged and inflamed spleen. The acute symptoms were attributed to intestinal obstruction, due either to pressure from the spleen or to adhesions at the seat of the ovarian stump. The symptoms grew steadily worse until forty-eight hours after admission, when the bowels responded freely to treatment, after which the vomiting ceased and her general condition improved. The respite was of short duration. The local tenderness, paroxysmal pains, and vomiting returned, accompanied by fever. The temperature ranged from 99° to 101° F. for ten days, and measured 100° F. on the morning of the operation. Peritonitis had evidently supervened, and at a consultation of the hospital staff it was decided that the removal of the offending spleen offered the only chance of recovery.

The operation was performed October 7. The parietal incision, seven and a half inches in length, was made along the outer border of the left rectus. On exploring the spleen, contrary to expectations based on the revelations

of the previous operation, it was found adherent to the abdominal wall, omentum, and intestines. The intestinal adhesions especially were firm and extensive, involving the entire under and inner surfaces of the tumor. Their separation consumed much time, the capsule of the spleen being torn in several places. The peritoneum gave unmistakable evidences of active inflammation. The pedicle was long, twisted through three complete turns, and, with its engorged and tortuous vessels, resembled a huge umbilical cord. It was trans-fixed, firmly tied with heavy twisted silk, using the Staffordshire knot, and for greater security encircled with another turn of the ligature. The ligature was cut short and the pedicle dropped, a glass drainage-tube placed, and the wound, on account of the patient's condition, hastily closed.

The hemorrhage was slight and easily controlled. The shock was profound and wholly out of proportion to the blood lost or the length of the operation. Hypodermic injections of brandy and strychnine were freely used. Apart from the shock, which threatened to prove fatal for hours after removal to bed, and the temperature, which for twelve days measured from 99° to 101° F., precisely as it had before the operation, there was nothing worthy of special comment during convalescence. At no time was there swelling of the parotid or lymphatic glands. The spleen, drained of its blood, weighed four and a quarter pounds and measured ten inches in length by five and a half in breadth. It was firmer in texture and darker in color than the normal gland. Microscopical examination showed thickening of the trabecular and intercellular connective tissue and pigment in the vessel walls. By an oversight, no microscopical examination of the patient's blood was made before or soon after the operation; at present the proportion of the red and white corpuscles is normal. Seven months after the extirpation, Mrs. A. has grown very fleshy, and reports excellent health, save an overpowering drowsiness.

After a summarizing of the literature on the subject, Zenner concludes that the present position of splenectomy may be briefly epitomized as follows: It is unjustifiable in leucocythæmia or other conditions in which there is extensive involvement of the lymphatic glands or a notable increase in the white blood-corpuscles.

It is indicated in tumors, simple hypertrophies, and other splenic enlargements which have proved rebellious to simple measures and are attended with danger or serious disability. In movable or displaced spleens requiring

interference, extirpation is preferable to operative fixation.

Severe traumatism of the spleen, with or without an external wound, or simple prolapse of the gland into a parietal wound, demand, as a rule, immediate extirpation. In cases of protrusion, experience shows that excision, partial or total, is a safer procedure than mere replacement.

Removal of the spleen for cystic disease has an excellent record, but most authors advise a preliminary trial of incision with drainage. In abscess it is better, except in rare cases, to incise and drain than to attempt removal of the organ.

#### OSTEOPLASTIC RESECTION OF THE SACRUM.

It is now generally admitted that the only way of dealing effectively with certain ailments of the rectum, especially in its upper parts, is by approaching the seat of disease from the posterior wall of the pelvis. KAMMERER (*Medical Record*, July 28, 1894), with this sentence, begins an able article recording in detail six operations performed by himself, with satisfactory results. He advocates Rydygier's procedure, which is as follows: The soft parts are incised, beginning at the posterior superior spine of the ilium on the left side and running down to the tip of the coccyx, thence in the median line to the anus. After division of the sacro-sciatic ligaments, the soft parts are removed from the anterior surface of the sacrum by the hand of the operator. A transverse incision is then added below the third sacral foramen, and the bone divided along this line with a chisel. A flap is now turned to the right side. With a retractor inserted at the tip of the flap, the latter can be easily held aside and manipulations about the rectum can be as readily carried on as when the bone has been entirely removed. The author has been impressed in all his cases with the rapidity with which this preliminary operation can be done and the absence of profuse hemorrhage. He fully endorses Rydygier's claim that his osteoplastic resection is a much less bloody operation than the permanent removal of coccyx and sacrum by any one of the other methods, with dissection of the soft parts from the posterior surface of the sacrum. In only one instance did Kammerer meet with considerable hemorrhage; here he operated in the lateral position. The knee-elbow position was employed in all the other cases, with distinct elevation of the pelvis, especially of the sacral region, the writer declaring this to be the most

desirable one for rectal surgery, since it controls hemorrhage through elevation, gives excellent access to the field of operation, the surgeon standing between the slightly separated thighs of the patient, also facilitating manipulations with the chisel, the pelvis being supported by sand-bags placed under the anterior iliac spines.

When the flap, including the coccyx, part of the sacrum, and the integuments, can be, from the nature of the case, returned to its place and sutured, the result will be an ideal one as regards restitution of the normal contour of the sacral region. In suturing the transverse incision the author always passes the needle down to the bone, but never includes the bone itself in a suture by any device whatever. Notwithstanding, in several cases in which he has had to elevate the flap a second time, he has always found firm union of bone surfaces, either fibrous or partly osseous. It is unfortunate that secondary operations so frequently become necessary in rectal surgery, for even when we have resected the rectum and made a circular suture of the ends, we frequently find that the latter gives way on the posterior circumference of the bowel. The operation of raising the flap a second time is no more tedious than the first. Greater care must be exercised to avoid the rectum, which now has been drawn close to the anterior surface of the sacrum by cicatricial contraction. When we are dealing with cases, such as fistula, where tamponade of the wound-cavity becomes necessary for some time, we should not suture the flap, but leave the wound-cavity entirely open. The author had good proof of the advisability of this procedure from his fourth case, where he got very good union of the transverse and vertical incisions, but in which a successful tamponade of the deep wound-cavity (about six inches) was not easily effected through the small opening corresponding to the unsutured part of the original incision. To this fact he attributes the ultimate re-establishing of a small vaginal fistula. Such wounds ought to heal from the bottom of the wound-cavity, to avoid even the slightest retention endangering the object in view, and the best guarantee for this is a wide opening, allowing free inspection and tamponade.

Where no sutures are used, some retraction of the flap develops after a time. There is no doubt much less than in flaps that are without a bony substratum. Even when only the lateral incision to the left of the sacrum has remained open, a distinct elevation of the soft parts over the sacrum results from the same cause,—a deformity which can, no doubt, at the proper time, be very readily remedied by an insignifi-



cant plastic operation. This is not so readily accomplished when no suturing at all has been done.

After some time secondary operations on the rectum are even more difficult than the original ones, owing to the development of much cicatricial tissue about the gut, which makes the latter more rigid, and does not, in consequence, permit the approximation of such parts which we may desire to unite by sutures. From all this we may conclude that it will be wise to do secondary operations as soon as the condition of the patient will permit.

The cases of fistula reported have not been entirely cured. They have been much benefited, and one of them is very likely closing. An anterior laparotomy would certainly have been unwise in any of them.

While technically difficult, the sacral route is still the easiest way to get at the seat of disease when the rectum is affected, and also in some cases in which the uterus is to be dealt with. Rydygier's preliminary operation is certainly well devised, and being as simple as the permanent resection of the sacrum, while not disfiguring, assuredly deserves preference.

#### HYPERSECRETION OF THE SWEAT-GLANDS OF THE FEET.

Against sweating feet, LEGOUX (*Therapeutische Blätter*, Wien, July, 1894) recommends,—

R. Liquor ferri sesquichlor., 30;  
Glycerini, 10;  
Ol. bergamot, 20. M.

Sig.—Apply with a brush each morning.

#### DANGERS OF GLYCERIN INJECTIONS INTO THE UTERUS FOR THE PURPOSE OF INDUCING PREMATURE LABOR.

EMBDEN (*Medical Record*, July 28, 1894) gives an extract of Pfannenstiël's article concerning the dangers connected with intra-uterine injections of glycerin for the purpose of inducing premature labor, and reports the history of two cases treated by the same writer, as well as one of his own. As a result of the above studies, he concludes that Pelzer's method is liable to occasion indisputable symptoms of glycerin-poisoning. This will be a death-blow to the method.

Concerning the first case, the glycerin cannot be considered the cause of the woman's death, as she suffered from nephritis. It is, nevertheless, remarkable that there was found a small

quantity of blood-colored water in the bladder, the urine being entirely free from blood in the last days before the injection was performed, as shown by frequent examinations. Pfannenstiël tries to find the cause of this in the injected glycerin.

The second case was undoubtedly a case of glycerin-poisoning, and although it did not damage the future health of the woman, it kept her in danger for some time. The woman was in perfect health up to the time of the injection; the urine was normal. One hour afterwards she had symptoms of glycerin-poisoning.

In the author's case there was a woman with nephritis, but there was not noticed at any time before the injection any trace of blood in the urine. After the delivery there was a good quantity of a dark-red urine in the bladder. In examining the same, Embden failed to find any red blood-corpuscles, but there was a large amount of hæmoglobin. The explanation of this appears to be a decomposition of the blood, brought on by the injected glycerin.

This does not seem so very strange, as we know—according to Pfannenstiël—that glycerin is liable to occasion a decomposition of the blood, as has been shown by numerous experimenters with dogs and rabbits, the hæmoglobinuria caused by glycerin bringing on a glomerulo-nephritis, followed, after the injection of more glycerin, by interstitial nephritis as well as by interstitial hepatitis.

It is, of course, strange that neither Pelzer nor others met with a similar accident after injections of glycerin.

Pfannenstiël finds an explanation of this in the fact that Schwan, Lebedeff, and Filehne have shown that in rabbits, when the glycerin is brought under the skin, hæmoglobinuria always occurred, but that it did not occur, or in a slight degree only, when it was injected directly into the veins. Without giving an explanation of this, Pfannenstiël deems it possible that, in Pelzer's cases, the glycerin was very rapidly absorbed by the circulatory system, while in his cases it acted in the decidua uteri as if it had been injected by the hypodermic method.

The writer's case is particularly interesting from the fact of the icterus following the hæmoglobinuria. It seems indisputable that this was caused by the decomposition of the blood poisoned by glycerin. The writer rather leans to the belief that the semi-comatose condition which appeared in his patient was brought on by the same cause; it did not look like a uræmic coma. Another danger of the injec-

tion of concentrated glycerin is the possibility of a thrombosis. Another objection to this method, in common with all injections of fluid of any kind between the uterus and the foetal sac, is the possibility of air entering the circulatory system.

Finally, the writer asserts that Pelzer's method should not be used at all for the purpose of inducing premature labor; more especially is it to be avoided in cases of nephritis.

#### FISTULA OF THE STOMACH IN A CHILD.

A child aged six years swallowed by mistake some hydrochloric acid, following which developed an oesophageal stricture, and gastrotomy was performed. Later gradual dilatation of the oesophagus was practised, and eventually food was introduced by means of a catheter passed through the mouth. At the time he was brought to the service of Dr. CHORON (*La Presse Médicale*, July, 1894) the patient was suffering from marasmus and emaciation threatening his life, and closure of the artificial opening was attempted to stop the continuous outflow of gastric juice and mucus, which was causing an eczematous condition of his entire abdomen.

The stomach was irrigated with a three-per-cent. solution of boric acid. The opening was excised, with a small collar of skin around it. The opening in the abdominal wall was now enlarged towards the left costal border.

With curved scissors the stomach was separated from the abdominal wall. A wound of the liver was tamponed to arrest hemorrhage.

The stomach was sutured with catgut, the other structures with silk (No. 1); first a Lembert suture to the serous membrane, then the muscles and skin received each a separate suture.

#### TREATMENT OF CHRONIC GONORRHEA.

Before the Society of Internal Medicine at Berlin, ROBERT KUTNER (*La Presse Médicale*, July, 1894) demonstrated the advantages of graduated instillations, basing his reasons upon two observations: 1, that gonorrhoea in the chronic form shows itself in circumscribed places; 2, that the introduction of the olive-tipped sound produces more pain at these localities than at other points in the canal.

First, with a *bougie à boule*, he measures the distance of these sensitive spots from the meatus. He then introduces a syringe with a hollow sound adjusted to the point, and applies silver nitrate (one per cent., ten per cent., or twenty

per cent.) or copper sulphate to the spots previously located by his measurements.

The advantages of this method are,—

1. Exact location.
2. Energetic action of the medicine exactly placed.
3. Less reaction.
4. Economy of time.
5. Simplicity of the procedure.

#### TREATMENT FOR ACNE VULGARIS.

PHILIPPSON, in *Therapeutische Monatshefte*, November, 1893 (*Monat. Praktische Dermat.*, July, 1894), says that the causation of acne is still so uncertain that the treatment must be symptomatic.

The pustules are opened and the contents pressed out; then he cuts through the induration; over this a fifty-per-cent. salicylic plaster is laid. Compresses of lead-water and acetic acid soften the skin, cause the pustules to disappear, and relieve the irritation.

For the milder forms, soap, salicylic acid, naphthol, resorcin, and sulphur are recommended.

The following formulæ are used at Lössor's clinic in Berlin:

1. R Naphthol, 10 parts;  
Vaseline,  
Saponis viridis, of each, 20 parts;  
Sulphur præcipitatis, 50 parts.  
M. et fiat pasta.
2. R Camphor trit.,  
Vaseline, of each, 10 parts;  
Pulv. cretæ albæ, 5 parts;  
Saponis viridis, 15 parts;  
Sulphur præcip., 50 parts.  
M. et fiat pasta.
3. R Resorcin,  
Amyli puri, of each, 5 parts;  
Vaseline, 15 parts;  
Zinci oxidi, 5 parts.  
M. et fiat pasta.

These pastes can be applied until inflammation follows, or can be washed off in a quarter to a half-hour, and can be followed by powders.

The first two are best used in the latter manner, while the third is milder. For the mildest forms, where single pustules are found, the following wash is used:

- R Acid. acet. conc.,  
Tinct. benzoes,  
Spirit. camphor., of each, 6 parts;  
Spirit., q. s. ad 100 parts. M.

Sig.—Apply with sponge night and morning.

*PELVIC EXUDATE.*

In a series of papers with the above title, PROFESSOR BIRNBAUM closes with the following therapy (*Der Frauenarzt*, July 7, 1894):

The best prophylaxis is a thorough antiseptic handling of each childbirth, each operation, or other manipulation of the genitalia.

The special treatment is necessarily local, since the fever and constitutional symptoms are dependent upon the local process.

Of prime importance is the removal of irritation or anything causing congestive changes or which obstructs the backward flow of blood, and avoiding unnecessary movements or internal examinations.

So long as fever and pain denote continuance of inflammation, cold compresses, ice-bags, or water of moderate temperature are employed to counteract it.

Kisch recommends for the acute stage intra-vaginal applications of cold by means of a special irrigator.

For plethoric patients bloodletting is recommended early in the childbirth by applying from six to ten leeches in the inguinal region of the affected side.

Not so strongly recommended is the use of leeches to the vaginal wall, owing to the irritation and the danger of infection.

The ice-bag is used only so long as the pain continues; then water compresses (22° to 25° C.) are resorted to, which may be continued for hours, under which treatment the absorption often goes on to completion.

The much-lauded use of unguent. cinereum, or ointment of potassium iodide, has yielded less prompt results than the water applications.

Where foul-smelling lochia are present, the vagina is washed out many times a day with sublimate (one-tenth per cent.) or carbolic-acid solutions (one to two per cent.).

For the fever, when it is very high and persistent, large doses of cinchona, antipyrin (cautiously), sodium salicylate, digitalis with acid, and the like drugs are employed.

If, in spite of this, the exudate goes to pus-formation, it is still possible to have absorption by the use of compresses. But when the continued high fever denotes the presence of pus, then drainage of the collection is required.

When there is a tendency to point externally, applications of flaxseed poultices, etc., are made.

When fluctuation is detected, an incision is made above Poupart's ligament, from one to two centimetres and two to three centimetres from the anterior superior iliac spine.

When fluctuation is not positive, exploratory puncture is recommended.

From the rectal region it is more difficult to remove the collection, but exploratory puncture may also be tried through the vagina. After opening in this situation, it is well to employ drainage.

When the abscess breaks into the rectum or bladder, without sufficient drainage, Byford recommends inserting a sound through the abscess opening, turning the point against the vaginal wall and cutting against the point of the sound.

If the exudate does not go on to pustulation, then iodine, internally as well as externally, is employed.

Painting with tincture iodi, inunctions of iodine, and potassium iodide ointment, or the rubbing of potassium iodide and lanolin into the abdominal wall.

Painting the cervix and vaginal mucous membranes with the tincture of iodine, or with iodine and glycerin, followed by dusting with iodoform, is also advised.

In anæmic patients the use of iodine must be guarded.

After iodine, cold, lukewarm, or hot irrigations, with or without addition of medications, are recommended.

The use of massage is recommended with caution, suppuration contraindicating this.

Electricity has not proved a success.

Mercury as inunction and internally is used where gonorrhœal cause is suspected.

Naturally, in each case good diet, iron, quinine, wine, and similar tonics must be used, and the patient must not be allowed to leave her bed too early.

*THE VAGINAL ANUS AND ITS TREATMENT.*

BUCKMASTER (*New York Medical Journal*, August 11, 1894) gives a carefully condensed report of the literature throwing light on this much vexed subject, with a detailed description of the methods he has employed in overcoming the deformity.

There are so few cured cases that it is easy to explain the attitude of conservative men towards operative procedure. It is important to classify the cases, that we may determine which are fit for operation. It is convenient to divide the cases into two classes. The first class comprises those patients who have control, and the second class includes those patients who pass their fæces involuntarily. The first class is not large in number, and if the patient will take

precautions to preserve cleanliness, and if the opening is large enough to pass formed fæces, operation is not advisable. A douche after each movement will in some cases prove sufficient to keep the patient comfortable. If such precautions are neglected, the mucous membrane of the vagina will become excoriated and abscesses may form in the connective tissue. If, in spite of this advice, the patient should still desire an operation, the results are sufficiently good and the dangers under sufficient control to warrant compliance with her request.

The second class, or those who have no control, includes the great number of cases. Most of them are recognized shortly after birth, and unless the opening is so small that it obstructs the passage of fæces, nothing need be done until a later time. Fæcal matter in healthy young infants is quite unirritating, but as the character of their food changes it may cause great trouble; for this reason careful attention should be given to the diet. It is easier to mould the tissues after the child is fifteen years of age than before this time, but it is not necessary to wait on this account.

In considering the dangers of the operation, we must not forget that all of the fatal cases occurred in a day before antiseptic surgery was understood. The operation the author describes is not more dangerous, he states, than that used to restore a ruptured sphincter. It is used particularly in those cases where there is no control. In cases where the patient has control, and it is necessary to free the bowel for some distance, there is more risk. A number of deaths have been recorded, but with the better technique of to-day the risk is no longer great if the patient be healthy.

The first step in the operation is to introduce a probe into the fistula from the vagina, and bring out the point of this instrument just above the levator ani muscle, the tissue above the probe being divided. The skin should be pierced in front of the lower part of the sling formed by the fibres of the levator ani muscle. The location of this muscle should be ascertained, if possible, before the patient is etherized. When the tissues above the probe have been divided, the rectum is seen, is divided, and may be slightly freed by a few strokes of the knife. It must be remembered that the backward extent of the incision only indicates the backward limit for the plane in which it is found; the skin is divided about an inch farther back.

The next step is to draw the rectum to the skin, and here one is very apt to make a mistake.

The rectum should be fastened to the skin without strain. If proper ligature material be used, and the strain is not too great, the sutures will never cut out, but will become embedded in the tissue, as is the case in all plastic work. On the second day after the writer first operated, he found that the strain had been too much for his stitches, and was obliged to cut those at the sides and place a new one in the middle of the wound; this entirely removed undue tension. If the tension had been too great, he would have drawn the rectum down as far as possible without strain, trusting to a future operation to reach the skin. By careful attention to this caution we can never fail to gain something, and it is only a question of time when the rectum can be securely anchored to the skin. It is important to bear in mind that if union of the rectum to any point of the skin is secured, no matter to how slight an extent, it is not a difficult matter to bring the remainder of the circumference of the bowels in the desired position at a later period.

Having united the rectum to the skin, the raw surfaces left at the side are sewed together. After the completion of the first step, the rectum opens below the vagina, and no raw surfaces are left. The patient can be on her feet in ten days.

The second step of the operation consists in forming that part of the pelvic floor which is usually known as the perineal body. It will differ very much in different cases, as the distance between the abnormal opening and the urethra varies. It cannot be properly done except by an operator who is a good plastic surgeon.

The third step suggests itself on theoretical grounds; the author has not yet had opportunity to put it into practice. He means to split the fibres of the levator ani muscle, as has been done with the rectus muscle in gastrotomy. If this is practicable, we ought to obtain a fairly good sphincter. It is not unlikely that those cases which have gained control after operation have done so by having the muscle, which has been divided, grow about the rectum.

#### FIXATION IN THE TREATMENT OF FRACTURES INTO JOINTS.

In an interesting discussion of this subject by COOK (*International Journal of Surgery*, August, 1894) the following conclusions and rules of treatment are laid down:

1. That bony or serious fibrous ankylosis is the result of injury and subsequent inflammation and not of immobilization.

2. That early passive motion only disarranges the fragments of bone, thereby increasing the production of callus; that it irritates the injured ligaments and, by increasing the inflammation, tends to produce the ankylosis it is thought to prevent.

3. Immobilization is useful only when active inflammation is present, or until the ruptured ligaments and broken bones have thoroughly united.

4. The logical treatment of a fracture into a joint, therefore, should be rest and local applications to reduce inflammation. Reduction of the fracture as early as possible, then immobilization until the bones and ligaments have united (from three to eight weeks, or more, according to circumstances).

5. Passive motion, massage, and use till the tissues become normal, or, if the massage fails, complete rupture of all adhesions under an anæsthetic. The factors which will ultimately determine ankylosis are the nature of the original injury, the character and duration of the subsequent inflammation, the destruction of bone and cartilage, cicatricial contraction of the soft tissues around the joint, and the age and condition of the patient.

#### DANGERS OF THE LONG RECTAL TUBE.

It has long been a disputed question as to whether the long rectal tube can safely be passed into the sigmoid flexure. In this relation the opinion of MR. HARRISON CRIPPS in a recent number of the *British Medical Journal*, is of interest.

In spite of the condemnation of the long rectal tube by Brodie, Treves, and many other eminent authorities, he still finds that in most cases of obstruction or supposed obstruction the tube has been introduced. Fortunately, these tubes are fairly soft, so that in a capacious rectum, when they impinge and are arrested about opposite the promontory of the sacrum, they simply coil up and do no harm. If stiffer ones are used, the patient's life is placed in imminent risk. A patient at St. Bartholomew's Hospital was to be operated on for ruptured perineum. In order to increase the supposed efficacy of the injection, a quart of soap and water, with some ounces of oil, were injected by means of a long tube; the injection never returned. A few hours afterwards, owing to the acute symptoms, Mr. Cripps assisted one of his colleagues in opening the abdomen. The soap and water and oil were found in the abdominal cavity, and a hole below a reduplicated fold in the upper part of the rectum.

The patient died. He says that the idea that these tubes can be generally passed into and beyond the sigmoid flexure is a pure delusion, save in the rarest circumstances. As a means of diagnosis, or of treatment of stricture beyond the reach of the finger, tubes of any kind are absolutely useless. If a stricture is actually present, it would be 100 to 1 against the long tube or bougie entering it, for it would almost certainly catch in the cul-de-sac generally caused by the invagination of the stricture. If a stricture is not present, the arrest of the bougie by the sacral promontory leads to delusive diagnosis. Brodie, in his lecture, alludes to a case in which a worthy practitioner had spent over one hundred and fifty hours in dilating a supposed stricture situated high up. The treatment had extended over a period of a year. Brodie, who was present at the post-mortem examination, found that there was no sign of a stricture, the bougie becoming arrested by a curve of the sacrum.—*Boston Medical and Surgical Journal*, September 13, 1894.

#### THE TECHNIQUE OF CURETTAGE.

M. SÄNGER (*International Journal of Surgery*, September, 1894) states that, aside from the infectious, gonorrhœal forms of chronic endometritis, the most frequent and important varieties are endometritis, menorrhagica, and hypersecretoria. For the former (endometritis interstitialis, fungosa, climacterica) the best treatment consists in curetting, followed after a few days by the application of caustics. In endometritis hypersecretoria, which is usually limited to the cervix uteri, irrigation, gauze "drainage," and cauterization are especially indicated. Irrigation must be preceded by dilatation of the cervix with laminaria tents, and rarely effects a cure unless associated with other measures. As a preparatory procedure to cauterization, washing out the uterus with a soda solution is of service. The use of gauze tampons, especially of medicated gauze, has a favorable action, although they should not be regarded as promoting drainage. They have the disadvantage of requiring to be frequently renewed. This objection does not apply to cauterization; the stronger the caustic the less frequently it has to be repeated. Säger believes that in general the cauterization resorted to is too mild and too frequently repeated. Among caustics he prefers a fifty-per-cent. solution of chloride of zinc, which is suitable for catarrhal as well as chronic, infectious, and menorrhagic forms. In cases where the cervical canal is narrow, however, in virgins and

nullipara, weaker solutions are in place. If a fifty-per-cent. solution be employed, the application should not be repeated until the end of sixteen to twenty days. For cauterization, Sanger employs a long, thin, silver sound.

#### DIAGNOSIS AND TREATMENT OF PROSTATIC ENLARGEMENT.

BELFIELD (*Indian Medical Journal*, August, 1894), in the following sentences, expresses his views on this subject :

While the etiology of prostatic enlargement still remains a matter of speculation, it is certain that the earliest clinical symptoms are due to vascular engorgement of the prostate and, by consequence, of the bladder. The actual increase in the size of the gland should not obscure the other factors in producing the symptoms, which may be out of all proportion to the perceptible enlargement. The factors contributing to the familiar symptoms associated with prostatic enlargement are :

1. Venous congestion and edema of prostate and bladder.
2. Fibroid thickening of the vesical (prostatic) sphincter, often extending to the detrusor and to the prostate.
3. Suppuration in the prostatic urethra (glands and utricle).
4. Hypertrophy of the prostatic elements (glandular or muscular, or both).
5. Chronic retention of urine, due to any one or all of these four antecedent conditions.

The most important as well as the most difficult task in diagnosis is the differentiation among these various morbid states ; for the prognosis as well as the treatment is determined by the predominance of one or another of them. For example, a prostatic patient complains of frequent and painful urination ; the chief trouble may be an aggravation of the usual venous congestion, in which case a brisk laxative, suppositories of ichthyol, and ergotin and strychnine internally will secure speedy relief. Again, the symptoms may be due to prostatic suppuration, in which event irrigation of the deep urethra with hot water containing hydrastin or silver nitrate is needed ; or the frequent urination may be simply the overflow of a distended bladder, which is relieved by the cautious daily use of a clean catheter.

It should be remembered that the symptoms clinically associated with prostatic hypertrophy depend upon several distinct morbid conditions, of which the mechanical impediment to the exit of urine may be the least ; and that no

routine treatment can be prescribed, the requirements varying with the case.

Our resources for meeting the needs of different patients may be thus summarized :

1. *Medical*.—(a) Improvement in the blood circulation through prostate and bladder is favored by proper diet and exercise, avoidance of constipation, massage of prostate between a sound in the bladder and finger in rectum, and by the daily use of a clean catheter ; internally, ergotin and strychnine are certainly useful.

(b) Suppuration in the bladder neck requires irrigation of the prostatic urethra with hot water, solutions of hydrastin, silver nitrate, etc., in addition to the measures already mentioned.

(c) Induration and distortion of the bladder neck may be improved by dilatation with large sounds or a special dilator.

In a certain percentage of cases the time arrives, sooner or later, when these measures fail to relieve, and more efficient and immediate aid must be rendered.

2. *Surgical Methods*.—(a) The simplest is puncture of the membranous urethra from the perineum and introduction of a drain, which is permitted to remain for a couple of weeks. The subsidence of congestion and edema, and the cleansing of the bladder thus induced, sometimes makes an apparent cure for many months. Puncture with a trocar through the prostate (Harrison), or drainage of the bas-fond behind the organ, is even more desirable.

(b) By a perineal urethrotomy the surgeon can secure not merely drainage, but also thorough digital stretching of the prostate and the incision or excision of obstructions at the orifice of the bladder.

(c) More satisfactory excision of prostatic obstructions has been accomplished by a combination of suprapubic cystotomy with perineal urethrotomy,—now a standard operation.

Within the past year there have been reported attempts to relieve the sufferings of the prostatic by securing atrophy of the enlarged prostate ; by Bier, through ligation of the internal iliacs, and by Raum,\* through castration. Bier reports three cases ; in one, death from septic peritonitis occurred ; in the remaining two, marked reduction in the size of the gland and decided improvement in symptoms

\* The credit of proposing castration as a means of producing prostatic atrophy undoubtedly belongs to Dr. J. William White, though Raum was probably the first to make a practical application of the proposal on man.—ED.

are reported. Castration alone is said to have accomplished a cure in Raum's two cases.

Two new operations upon the enlarged prostate itself have been recorded; one by Nicoll, who made a submucous removal of the entire prostate from the perineum in two cases with good result; the other, by Belfield, combines the removal of any part or all of the prostate with perfect drainage of the bladder and deep urethra. By incision into the ischio-rectal fossa, the prostate and trigone are laid bare and incised in the median line; each half of the prostate can be enucleated to any desired extent. A suprapubic incision—robbed of its danger by the perfect drainage secured through the posterior wound—can be made, if required for freedom of manipulation. This operation seems to meet all the indications of all cases. Like most other operative procedures, it is undoubtedly too severe for feeble patients to endure.

#### ABSCESS OF THE APPENDIX.

During a recent clinic MCBURNEY (*International Journal of Surgery*, September, 1894) presented a case of more than usual interest and one rarely met with. Three weeks prior to admission the patient had been in good health, when she was seized with a pain in the right iliac fossa, together with nausea and vomiting. The pain continued to increase in severity up to the time she entered the hospital, ten days before. She had a temperature of  $101^{\circ}$  F., pulse rather feeble, abdomen slightly tender on pressure, but with the walls relaxed. On palpation, a tumor in the right iliac fossa could be readily felt, which was not adherent to its walls, nearly spherical in shape and nodular in character. The history of the case was not of much aid in arriving at a diagnosis. There was no reason to believe that the tubes and ovaries were affected, and although the tumor was situated very near the pelvis, it did not extend into that cavity. There was no distention or obstruction, such as would be caused by a tumor in or around the intestine, thus pointing to the origin of the tumor as an abscess of the appendix.

As the patient was not suffering from high fever, nausea, or distention, the trouble being entirely localized, operation was postponed. The next day the tumor had entirely disappeared, and, unfortunately, no attention had been paid to the character of stools, which might have afforded an explanation of this occurrence. There is no doubt that she had an abscess of the appendix, which evacuated itself into the intestine through a new passage. The

patient was in a more comfortable condition and the pain entirely allayed. Close examination of the abdomen revealed an induration of the tissues at the site of the original tumor. The patient continued to have fever, though somewhat reduced in intensity since that time. Her condition remained about the same. Slight abdominal tenderness, but no distention, was present, and the bowels were active. In cases of this kind, where the abscess has burst into the intestine, some patients have continued in good health and been entirely cured. On the other hand, cases with this history sometimes suffer from repeated recurrences, until an operation has been done for their final cure. In such cases, on cutting down, the reporter has found the appendix entirely separated and lying quite loose in the mass of connective tissue forming the wall of the abscess, the opening in the gut still existing.

Therefore, McBurney advised operation in the above case. He calls attention to the fact that cases of appendicitis differ very greatly in character. Incisions made through the abdominal wall must be adapted to the requirements of each case. In some cases the appendix can be removed with perfect ease through a very small incision, say one and a half inches in length, but to apply such a method, as recently described in some of the journals, indiscriminately to the different cases, and to adopt a standard incision for abdominal section, is useless. The incision must be adapted to the character of the case to be operated on; we should not accept any method of entering the peritoneal cavity through a small opening in operating for an extensive disease. If we know by experience that the disease is small in extent, then we can remove the appendix through a small aperture with advantage. This, of course, does not apply to the cutaneous incision.

The operator, after cutting down to the appendix, found an abscess cavity. The appendix was removed and the opening in the intestine sewed up. The patient was in such a condition that the removal of the diseased appendix seemed the only course to prevent an imminent attack of appendicitis.

#### CÆLIOTOMY IN TYPHOID PERFORATION.

A case of operation of this nature is reported in the *British Medical Journal*, No. 1783. The patient was in the fourth week of the typhoid fever. Symptoms of perforation developed, attended by collapse. The abdomen was opened as soon as the patient reacted. Perforation was

discovered twelve inches above the ileo-cæcal valve. The ulcer, which had for its centre this perforation, was excised; the opening in the gut was closed by mucous membrane and peritoneal sutures; the operation lasted an hour; the patient lived until the sixth day.

*REPORT OF THREE CASES IN WHICH  
THE MURPHY BUTTON WAS  
EMPLOYED.*

RUTH (*Mathews's Medical Quarterly*, vol. i., No. 4) reports three cases in which the Murphy button was employed.

A child of five years had suffered from intestinal obstruction for three months. This was due to sarcoma, so extensive that the entire cæcum, two inches of the colon, three-quarters of an inch of the ileum and the appendix had to be removed. The continuity of the gut was restored by a Murphy button. The child lived more than six months, and died of recurrence.

The second patient was thirteen years old. A portion of the ileum was resected because of obstruction due to tumor of the mesentery. End-to-end approximation was made with a large size Murphy button; this was passed on the fourteenth day.

The third case, twenty-eight years old, was suffering from a fistulous opening into the jejunum. Five inches of gut, including the fistula, were resected and the continuity restored by the button. As when the abdomen was nearly closed it was noticed that fæcal gas was passing, the wound was reopened to ascertain its source, and five inches more of injured gut removed, containing a pus cavity near the mesentery. Another junction was made as before, but the opening through which the gas passed was not found. This case perished in three hours.

Ruth claims for the button that it shortens the time required to do an intestinal anastomosis fifteen to forty minutes; that, if properly applied, leakage is impossible, and no hydraulic or gaseous pressure is needed to determine the fact. It is the strongest junction known. It gives the minimum cicatrix and contraction, and is the only plan that can be relied upon to make the ideal junction. After completing its work it leaves no foreign body of any kind behind. There is no danger of causing obstruction by failure of the button to pass the ileo-cæcal valve. The greatly lessened mortality makes this hitherto most dreaded field of work compare favorably with other intraperitoneal operations. It should relegate fæcal fistulæ following operations for strangulated hernia and

intestinal resections to the past. No care need be taken to have the proximal and distal portion of the gut correspond in size.

*TREATMENT OF VESICO-VAGINAL FIS-  
TULA BY OPERATION FROM  
WITHIN THE BLADDER.*

In an instructive paper in the *Annals of Surgery* for October, 1894, BOND advocates the treatment of vesico-vaginal fistula by operation from within the bladder.

The cases most suitable for treatment by the new route are those in which extensive cicatricial contraction has occurred; in such cases the vaginal roof is often tightly stretched across the pelvis, and the neck of the uterus cannot be drawn down; if, under these conditions, the fistula be extensive and situated high up near the uterus, considerable advantage is obtained by choosing the new method.

As regards the operation itself. The bladder may first be injected, the finger of an assistant meanwhile blocking the fistulous opening; if this be impossible, it may be opened by a vertical incision above the pubes on a sound, the peritoneum being carefully drawn out of the way.

McGill adopted in his cases a transverse incision through the skin and recti muscles, and also into the bladder; but the writer found that the vertical incision gives plenty of room, and the recti can be partially divided transversely, if necessary, and then drawn outward. The walls of the bladder are now held apart and the cavity opened out by three long, curved metal retractors, and by these means and upward pressure on the bladder by the assistant's finger in the vagina the fistula and field of operation can be brought well within reach; the thin cicatricial junction of the two mucous membranes is now incised all around, and two flaps of vesical mucous membrane are raised, one on either side of the rent, with their edges turned inward towards the bladder, and are sutured with catgut on a double-curved needle, such as is used for cleft-palate suture; at this stage the rectangular knives and long forceps are also useful, and care must be taken at the angles to extend the separation of the mucous membrane beyond the actual limits of the fistula.

A few silver-wire sutures are afterwards used to draw the edges of the vaginal mucous membrane together, these having been already freshened on their vesical surface by the operation within the bladder.

It is very important in the after-treatment to



avoid the occurrence of cystitis, for which purpose continuous irrigation of the bladder, day and night, with warm boracic solution is very useful. It is carried out as follows:

After the closure of the fistula, a piece of india-rubber tubing, or a large Jacques catheter, is passed through the urethra and drawn out above through the suprapubic wound, and to the upper end of this is attached the nozzle of the irrigator tube. The tube within the bladder has a few lateral holes cut in that part of its course which lies within the cavity of the viscus, and these allow of a free current of lotion both inward and outward. The cavity can be distended and flushed at will by compressing the tube beyond the urethra; the rate of flow can be easily regulated by pressure-clamps and the irrigator kept constantly warm by a cotton-wool jacket. This irrigation can be continued as long as necessary. The tube can be gradually dispensed with, by first drawing it within the bladder and allowing the suprapubic opening to close, and then removing it entirely.

The portion of tubing projecting from the urethra should be sufficiently long to reach a receptacle, in order to avoid wetting the bed.

In addition, Bond found this continuous irrigation very useful in other cases of suprapubic cystotomy, in which the bladder has been drained by a tube passed through the membranous urethra, the continuous current of the acid lotion preventing the deposition of phosphates in and around the wound.

The suprapubic method offers a surer means of closing the fistulous opening in bad cases: first, because the vesical flaps when raised and turned inward have their surfaces opposed to the direction of the current of urine flowing through the fistula, and are thus more tightly closed by its pressure, unlike the flaps formed by vaginal mucous membrane; the vesical flap is the valuable agent in closing the opening, and it is in proportion to the care taken to thoroughly free and separate these that success depends, even in operating through the vagina. Moreover, in most cases of extensive loss of substance, the vesical mucous membrane has grown over the edge of the fistula, projecting into the vagina, and is more voluminous than the vaginal membrane.

Secondly, the suprapubic opening, especially where combined with the urethral drain and constant irrigation, insures complete drainage,—that is, the absence of all tension within the bladder. This is a most important factor, and is in itself sufficient in some cases to bring about cure without further operation.

Such an opening is a far more effectual form

of drainage than the introduction of a self-retaining catheter only, which is almost sure to induce cystitis.

#### REPLANTATION.

The operation consists in replacing in its socket a tooth which has been partially or completely dislocated. The union after replantation is brought about through the periodontal membrane. In cases where the tooth is living and immediately replaced, a re-establishment of the vitality of the pulp is sometimes produced. Magitot, who has recorded a large number of cases of replantation, maintains that, for success, there must be a complete ring of healthy membrane on the tooth. Results depend upon the nature of the conditions for which the operation is undertaken. If for traumatism, and the tooth is immediately replaced, a permanent result may be looked for; but, on the other hand, if replacement is delayed, the prognosis is naturally not so good.

HARRISON (*Quarterly Medical Journal*, vol. ii., Part IV.) has had four such cases, and reports in detail an interesting case illustrating the above statements.

#### ELECTRO-PUNCTURE OF THE TONSILS.

STRAIGHT (*Western Reserve Medical Journal*, vol. iii., No. 1) states that a fair trial of both electro-puncture and excision has led him to an almost entire use of the latter. Galvano-puncture is a very painful procedure, in spite of painting the tonsil with a 20-grain solution of cocaine. The injection of cocaine into the tonsil seems hardly justifiable for an operation that must be repeated so many times.

The tenderness after electro-puncture is often very great, and the patient complains bitterly for a number of days. The tenderness after excision is, as a rule, almost wanting after twelve hours, if the tonsillotome is sharp and the stump of the tonsil is not bruised. Many cases, twenty hours after tonsillotomy, say that the throat feels much less uncomfortable than before the operation, and that the tenderness that was almost constantly present, especially after the least cold, was greater than that from the excision. It might be urged that the writer has made too free use of electro-puncture in his cases. He has cauterized deeply and at other times superficially. When he cauterized carefully, he accomplished next to nothing. When he cauterized deeply and made a number of punctures, the tenderness following was much

interference, extirpation is preferable to operative fixation.

Severe traumatism of the spleen, with or without an external wound, or simple prolapse of the gland into a parietal wound, demand, as a rule, immediate extirpation. In cases of protrusion, experience shows that excision, partial or total, is a safer procedure than mere replacement.

Removal of the spleen for cystic disease has an excellent record, but most authors advise a preliminary trial of incision with drainage. In abscess it is better, except in rare cases, to incise and drain than to attempt removal of the organ.

#### OSTEOPLASTIC RESECTION OF THE SACRUM.

It is now generally admitted that the only way of dealing effectively with certain ailments of the rectum, especially in its upper parts, is by approaching the seat of disease from the posterior wall of the pelvis. KAMMERER (*Medical Record*, July 28, 1894), with this sentence, begins an able article recording in detail six operations performed by himself, with satisfactory results. He advocates Rydygier's procedure, which is as follows: The soft parts are incised, beginning at the posterior superior spine of the ilium on the left side and running down to the tip of the coccyx, thence in the median line to the anus. After division of the sacro-sciatic ligaments, the soft parts are removed from the anterior surface of the sacrum by the hand of the operator. A transverse incision is then added below the third sacral foramen, and the bone divided along this line with a chisel. A flap is now turned to the right side. With a retractor inserted at the tip of the flap, the latter can be easily held aside and manipulations about the rectum can be as readily carried on as when the bone has been entirely removed. The author has been impressed in all his cases with the rapidity with which this preliminary operation can be done and the absence of profuse hemorrhage. He fully endorses Rydygier's claim that his osteoplastic resection is a much less bloody operation than the permanent removal of coccyx and sacrum by any one of the other methods, with dissection of the soft parts from the posterior surface of the sacrum. In only one instance did Kammerer meet with considerable hemorrhage; here he operated in the lateral position. The knee-elbow position was employed in all the other cases, with distinct elevation of the pelvis, especially of the sacral region, the writer declaring this to be the most

desirable one for rectal surgery, since it controls hemorrhage through elevation, gives excellent access to the field of operation, the surgeon standing between the slightly separated thighs of the patient, also facilitating manipulations with the chisel, the pelvis being supported by sand-bags placed under the anterior iliac spines.

When the flap, including the coccyx, part of the sacrum, and the integuments, can be, from the nature of the case, returned to its place and sutured, the result will be an ideal one as regards restitution of the normal contour of the sacral region. In suturing the transverse incision the author always passes the needle down to the bone, but never includes the bone itself in a suture by any device whatever. Notwithstanding, in several cases in which he has had to elevate the flap a second time, he has always found firm union of bone surfaces, either fibrous or partly osseous. It is unfortunate that secondary operations so frequently become necessary in rectal surgery, for even when we have resected the rectum and made a circular suture of the ends, we frequently find that the latter gives way on the posterior circumference of the bowel. The operation of raising the flap a second time is no more tedious than the first. Greater care must be exercised to avoid the rectum, which now has been drawn close to the anterior surface of the sacrum by cicatricial contraction. When we are dealing with cases, such as fistula, where tamponade of the wound-cavity becomes necessary for some time, we should not suture the flap, but leave the wound-cavity entirely open. The author had good proof of the advisability of this procedure from his fourth case, where he got very good union of the transverse and vertical incisions, but in which a successful tamponade of the deep wound-cavity (about six inches) was not easily effected through the small opening corresponding to the unsutured part of the original incision. To this fact he attributes the ultimate re-establishing of a small vaginal fistula. Such wounds ought to heal from the bottom of the wound-cavity, to avoid even the slightest retention endangering the object in view, and the best guarantee for this is a wide opening, allowing free inspection and tamponade.

Where no sutures are used, some retraction of the flap develops after a time. There is no doubt much less than in flaps that are without a bony substratum. Even when only the lateral incision to the left of the sacrum has remained open, a distinct elevation of the soft parts over the sacrum results from the same cause,—a deformity which can, no doubt, at the proper time, be very readily remedied by an insignifi-

cant plastic operation. This is not so readily accomplished when no suturing at all has been done.

After some time secondary operations on the rectum are even more difficult than the original ones, owing to the development of much cicatricial tissue about the gut, which makes the latter more rigid, and does not, in consequence, permit the approximation of such parts which we may desire to unite by sutures. From all this we may conclude that it will be wise to do secondary operations as soon as the condition of the patient will permit.

The cases of fistula reported have not been entirely cured. They have been much benefited, and one of them is very likely closing. An anterior laparotomy would certainly have been unwise in any of them.

While technically difficult, the sacral route is still the easiest way to get at the seat of disease when the rectum is affected, and also in some cases in which the uterus is to be dealt with. Rydygier's preliminary operation is certainly well devised, and being as simple as the permanent resection of the sacrum, while not disfiguring, assuredly deserves preference.

#### HYPERSECRETION OF THE SWEAT-GLANDS OF THE FEET.

Against sweating feet, LÉGOUX (*Therapeutische Blätter*, Wien, July, 1894) recommends,—

R. Liquor ferri sesquichlor., 30;  
Glycerini, 10;  
Ol. bergamot, 20. M.

Sig.—Apply with a brush each morning.

#### DANGERS OF GLYCERIN INJECTIONS INTO THE UTERUS FOR THE PURPOSE OF INDUCING PREMATURE LABOR.

EMBDEN (*Medical Record*, July 28, 1894) gives an extract of Pfannenstiël's article concerning the dangers connected with intra-uterine injections of glycerin for the purpose of inducing premature labor, and reports the history of two cases treated by the same writer, as well as one of his own. As a result of the above studies, he concludes that Pelzer's method is liable to occasion indisputable symptoms of glycerin-poisoning. This will be a death-blow to the method.

Concerning the first case, the glycerin cannot be considered the cause of the woman's death, as she suffered from nephritis. It is, nevertheless, remarkable that there was found a small

quantity of blood-colored water in the bladder, the urine being entirely free from blood in the last days before the injection was performed, as shown by frequent examinations. Pfannenstiël tries to find the cause of this in the injected glycerin.

The second case was undoubtedly a case of glycerin-poisoning, and although it did not damage the future health of the woman, it kept her in danger for some time. The woman was in perfect health up to the time of the injection; the urine was normal. One hour afterwards she had symptoms of glycerin-poisoning.

In the author's case there was a woman with nephritis, but there was not noticed at any time before the injection any trace of blood in the urine. After the delivery there was a good quantity of a dark-red urine in the bladder. In examining the same, Embden failed to find any red blood-corpuscles, but there was a large amount of hæmoglobin. The explanation of this appears to be a decomposition of the blood, brought on by the injected glycerin.

This does not seem so very strange, as we know—according to Pfannenstiël—that glycerin is liable to occasion a decomposition of the blood, as has been shown by numerous experimenters with dogs and rabbits, the hæmoglobinuria caused by glycerin bringing on a glomerulo-nephritis, followed, after the injection of more glycerin, by interstitial nephritis as well as by interstitial hepatitis.

It is, of course, strange that neither Pelzer nor others met with a similar accident after injections of glycerin.

Pfannenstiël finds an explanation of this in the fact that Schwan, Lebedeff, and Filehne have shown that in rabbits, when the glycerin is brought under the skin, hæmoglobinuria always occurred, but that it did not occur, or in a slight degree only, when it was injected directly into the veins. Without giving an explanation of this, Pfannenstiël deems it possible that, in Pelzer's cases, the glycerin was very rapidly absorbed by the circulatory system, while in his cases it acted in the decidua uteri as if it had been injected by the hypodermic method.

The writer's case is particularly interesting from the fact of the icterus following the hæmoglobinuria. It seems indisputable that this was caused by the decomposition of the blood poisoned by glycerin. The writer rather leans to the belief that the semi-comatose condition which appeared in his patient was brought on by the same cause; it did not look like a uræmic coma. Another danger of the injec-

tion of concentrated glycerin is the possibility of a thrombosis. Another objection to this method, in common with all injections of fluid of any kind between the uterus and the foetal sac, is the possibility of air entering the circulatory system.

Finally, the writer asserts that Pelzer's method should not be used at all for the purpose of inducing premature labor; more especially is it to be avoided in cases of nephritis.

#### FISTULA OF THE STOMACH IN A CHILD.

A child aged six years swallowed by mistake some hydrochloric acid, following which developed an oesophageal stricture, and gastrotomy was performed. Later gradual dilatation of the oesophagus was practised, and eventually food was introduced by means of a catheter passed through the mouth. At the time he was brought to the service of Dr. CHORON (*La Presse Médicale*, July, 1894) the patient was suffering from marasmus and emaciation threatening his life, and closure of the artificial opening was attempted to stop the continuous outflow of gastric juice and mucus, which was causing an eczematous condition of his entire abdomen.

The stomach was irrigated with a three-per-cent. solution of boric acid. The opening was excised, with a small collar of skin around it. The opening in the abdominal wall was now enlarged towards the left costal border.

With curved scissors the stomach was separated from the abdominal wall. A wound of the liver was tamponed to arrest hemorrhage.

The stomach was sutured with catgut, the other structures with silk (No. 1); first a Lembert suture to the serous membrane, then the muscles and skin received each a separate suture.

#### TREATMENT OF CHRONIC GONORRHEA.

Before the Society of Internal Medicine at Berlin, ROBERT KUTNER (*La Presse Médicale*, July, 1894) demonstrated the advantages of graduated instillations, basing his reasons upon two observations: 1, that gonorrhœa in the chronic form shows itself in circumscribed places; 2, that the introduction of the olive-tipped sound produces more pain at these localities than at other points in the canal.

First, with a *bougie à boule*, he measures the distance of these sensitive spots from the meatus. He then introduces a syringe with a hollow sound adjusted to the point, and applies silver nitrate (one per cent., ten per cent., or twenty

per cent.) or copper sulphate to the spots previously located by his measurements.

The advantages of this method are,—

1. Exact location.
2. Energetic action of the medicine exactly placed.
3. Less reaction.
4. Economy of time.
5. Simplicity of the procedure.

#### TREATMENT FOR ACNE VULGARIS.

PHILIPPSON, in *Therapeutische Monatshefte*, November, 1893 (*Monat. Praktische Dermat.*, July, 1894), says that the causation of acne is still so uncertain that the treatment must be symptomatic.

The pustules are opened and the contents pressed out; then he cuts through the induration; over this a fifty-per-cent. salicylic plaster is laid. Compresses of lead-water and acetic acid soften the skin, cause the pustules to disappear, and relieve the irritation.

For the milder forms, soap, salicylic acid, naphthol, resorcin, and sulphur are recommended.

The following formulæ are used at Lessor's clinic in Berlin:

1. R Naphthol, 10 parts;  
Vaseline,  
Saponis viridis, of each, 20 parts;  
Sulphur præcipitatis, 50 parts.  
M. et fiat pasta.
2. R Camphor trit.,  
Vaseline, of each, 10 parts;  
Pulv. cretæ albæ, 5 parts;  
Saponis viridis, 15 parts;  
Sulphur præcip., 50 parts.  
M. et fiat pasta.
3. R Resorcin,  
Amyli puri, of each, 5 parts;  
Vaseline, 15 parts;  
Zinci oxidi, 5 parts.  
M. et fiat pasta.

These pastes can be applied until inflammation follows, or can be washed off in a quarter to a half-hour, and can be followed by powders.

The first two are best used in the latter manner, while the third is milder. For the mildest forms, where single pustules are found, the following wash is used:

- R Acid. acet. conc.,  
Tinct. benzoës,  
Spirit. camphor., of each, 6 parts;  
Spirit., q. s. ad 100 parts. M.  
Sig.—Apply with sponge night and morning.

*PELVIC EXUDATE.*

In a series of papers with the above title, PROFESSOR BIRNBAUM closes with the following therapy (*Der Frauenarzt*, July 7, 1894):

The best prophylaxis is a thorough antiseptic handling of each childbirth, each operation, or other manipulation of the genitalia.

The special treatment is necessarily local, since the fever and constitutional symptoms are dependent upon the local process.

Of prime importance is the removal of irritation or anything causing congestive changes or which obstructs the backward flow of blood, and avoiding unnecessary movements or internal examinations.

So long as fever and pain denote continuance of inflammation, cold compresses, ice-bags, or water of moderate temperature are employed to counteract it.

Kisch recommends for the acute stage intravaginal applications of cold by means of a special irrigator.

For plethoric patients bloodletting is recommended early in the childbirth by applying from six to ten leeches in the inguinal region of the affected side.

Not so strongly recommended is the use of leeches to the vaginal wall, owing to the irritation and the danger of infection.

The ice-bag is used only so long as the pain continues; then water compresses (22° to 25° C.) are resorted to, which may be continued for hours, under which treatment the absorption often goes on to completion.

The much-lauded use of unguent. cinereum, or ointment of potassium iodide, has yielded less prompt results than the water applications.

Where foul-smelling lochia are present, the vagina is washed out many times a day with sublimate (one-tenth per cent.) or carbolic-acid solutions (one to two per cent.).

For the fever, when it is very high and persistent, large doses of cinchona, antipyrin (cautiously), sodium salicylate, digitalis with acid, and the like drugs are employed.

If, in spite of this, the exudate goes to pus-formation, it is still possible to have absorption by the use of compresses. But when the continued high fever denotes the presence of pus, then drainage of the collection is required.

When there is a tendency to point externally, applications of flaxseed poultices, etc., are made.

When fluctuation is detected, an incision is made above Poupert's ligament, from one to two centimetres and two to three centimetres from the anterior superior iliac spine.

When fluctuation is not positive, exploratory puncture is recommended.

From the rectal region it is more difficult to remove the collection, but exploratory puncture may also be tried through the vagina. After opening in this situation, it is well to employ drainage.

When the abscess breaks into the rectum or bladder, without sufficient drainage, Byford recommends inserting a sound through the abscess opening, turning the point against the vaginal wall and cutting against the point of the sound.

If the exudate does not go on to pustulation, then iodine, internally as well as externally, is employed.

Painting with tincture iodi, inunctions of iodine, and potassium iodide ointment, or the rubbing of potassium iodide and lanolin into the abdominal wall.

Painting the cervix and vaginal mucous membranes with the tincture of iodine, or with iodine and glycerin, followed by dusting with iodoform, is also advised.

In anæmic patients the use of iodine must be guarded.

After iodine, cold, lukewarm, or hot irrigations, with or without addition of medications, are recommended.

The use of massage is recommended with caution, suppuration contraindicating this.

Electricity has not proved a success.

Mercury as inunction and internally is used where gonorrhœal cause is suspected.

Naturally, in each case good diet, iron, quinine, wine, and similar tonics must be used, and the patient must not be allowed to leave her bed too early.

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*THE VAGINAL ANUS AND ITS TREATMENT.*

BUCKMASTER (*New York Medical Journal*, August 11, 1894) gives a carefully condensed report of the literature throwing light on this much vexed subject, with a detailed description of the methods he has employed in overcoming the deformity.

There are so few cured cases that it is easy to explain the attitude of conservative men towards operative procedure. It is important to classify the cases, that we may determine which are fit for operation. It is convenient to divide the cases into two classes. The first class comprises those patients who have control, and the second class includes those patients who pass their fæces involuntarily. The first class is not large in number, and if the patient will take

precautions to preserve cleanliness, and if the opening is large enough to pass formed fæces, operation is not advisable. A douche after each movement will in some cases prove sufficient to keep the patient comfortable. If such precautions are neglected, the mucous membrane of the vagina will become excoriated and abscesses may form in the connective tissue. If, in spite of this advice, the patient should still desire an operation, the results are sufficiently good and the dangers under sufficient control to warrant compliance with her request.

The second class, or those who have no control, includes the great number of cases. Most of them are recognized shortly after birth, and unless the opening is so small that it obstructs the passage of fæces, nothing need be done until a later time. Fæcal matter in healthy young infants is quite unirritating, but as the character of their food changes it may cause great trouble; for this reason careful attention should be given to the diet. It is easier to mould the tissues after the child is fifteen years of age than before this time, but it is not necessary to wait on this account.

In considering the dangers of the operation, we must not forget that all of the fatal cases occurred in a day before antiseptic surgery was understood. The operation the author describes is not more dangerous, he states, than that used to restore a ruptured sphincter. It is used particularly in those cases where there is no control. In cases where the patient has control, and it is necessary to free the bowel for some distance, there is more risk. A number of deaths have been recorded, but with the better technique of to-day the risk is no longer great if the patient be healthy.

The first step in the operation is to introduce a probe into the fistula from the vagina, and bring out the point of this instrument just above the levator ani muscle, the tissue above the probe being divided. The skin should be pierced in front of the lower part of the sling formed by the fibres of the levator ani muscle. The location of this muscle should be ascertained, if possible, before the patient is etherized. When the tissues above the probe have been divided, the rectum is seen, is divided, and may be slightly freed by a few strokes of the knife. It must be remembered that the backward extent of the incision only indicates the backward limit for the plane in which it is found; the skin is divided about an inch farther back.

The next step is to draw the rectum to the skin, and here one is very apt to make a mistake.

The rectum should be fastened to the skin without strain. If proper ligature material be used, and the strain is not too great, the sutures will never cut out, but will become embedded in the tissue, as is the case in all plastic work. On the second day after the writer first operated, he found that the strain had been too much for his stitches, and was obliged to cut those at the sides and place a new one in the middle of the wound; this entirely removed undue tension. If the tension had been too great, he would have drawn the rectum down as far as possible without strain, trusting to a future operation to reach the skin. By careful attention to this caution we can never fail to gain something, and it is only a question of time when the rectum can be securely anchored to the skin. It is important to bear in mind that if union of the rectum to any point of the skin is secured, no matter to how slight an extent, it is not a difficult matter to bring the remainder of the circumference of the bowels in the desired position at a later period.

Having united the rectum to the skin, the raw surfaces left at the side are sewed together. After the completion of the first step, the rectum opens below the vagina, and no raw surfaces are left. The patient can be on her feet in ten days.

The second step of the operation consists in forming that part of the pelvic floor which is usually known as the perineal body. It will differ very much in different cases, as the distance between the abnormal opening and the urethra varies. It cannot be properly done except by an operator who is a good plastic surgeon.

The third step suggests itself on theoretical grounds; the author has not yet had opportunity to put it into practice. He means to split the fibres of the levator ani muscle, as has been done with the rectus muscle in gastrotomy. If this is practicable, we ought to obtain a fairly good sphincter. It is not unlikely that those cases which have gained control after operation have done so by having the muscle, which has been divided, grow about the rectum.

#### FIXATION IN THE TREATMENT OF FRACTURES INTO JOINTS.

In an interesting discussion of this subject by COOK (*International Journal of Surgery*, August, 1894) the following conclusions and rules of treatment are laid down:

1. That bony or serious fibrous ankylosis is the result of injury and subsequent inflammation and not of immobilization.

2. That early passive motion only disarranges the fragments of bone, thereby increasing the production of callus; that it irritates the injured ligaments and, by increasing the inflammation, tends to produce the ankylosis it is thought to prevent.

3. Immobilization is useful only when active inflammation is present, or until the ruptured ligaments and broken bones have thoroughly united.

4. The logical treatment of a fracture into a joint, therefore, should be rest and local applications to reduce inflammation. Reduction of the fracture as early as possible, then immobilization until the bones and ligaments have united (from three to eight weeks, or more, according to circumstances).

5. Passive motion, massage, and use till the tissues become normal, or, if the massage fails, complete rupture of all adhesions under an anæsthetic. The factors which will ultimately determine ankylosis are the nature of the original injury, the character and duration of the subsequent inflammation, the destruction of bone and cartilage, cicatricial contraction of the soft tissues around the joint, and the age and condition of the patient.

#### DANGERS OF THE LONG RECTAL TUBE.

It has long been a disputed question as to whether the long rectal tube can safely be passed into the sigmoid flexure. In this relation the opinion of MR. HARRISON CRIPPS in a recent number of the *British Medical Journal*, is of interest.

In spite of the condemnation of the long rectal tube by Brodie, Treves, and many other eminent authorities, he still finds that in most cases of obstruction or supposed obstruction the tube has been introduced. Fortunately, these tubes are fairly soft, so that in a capacious rectum, when they impinge and are arrested about opposite the promontory of the sacrum, they simply coil up and do no harm. If stiffer ones are used, the patient's life is placed in imminent risk. A patient at St. Bartholomew's Hospital was to be operated on for ruptured perineum. In order to increase the supposed efficacy of the injection, a quart of soap and water, with some ounces of oil, were injected by means of a long tube; the injection never returned. A few hours afterwards, owing to the acute symptoms, Mr. Cripps assisted one of his colleagues in opening the abdomen. The soap and water and oil were found in the abdominal cavity, and a hole below a reduplicated fold in the upper part of the rectum.

The patient died. He says that the idea that these tubes can be generally passed into and beyond the sigmoid flexure is a pure delusion, save in the rarest circumstances. As a means of diagnosis, or of treatment of stricture beyond the reach of the finger, tubes of any kind are absolutely useless. If a stricture is actually present, it would be 100 to 1 against the long tube or bougie entering it, for it would almost certainly catch in the cul-de-sac generally caused by the invagination of the stricture. If a stricture is not present, the arrest of the bougie by the sacral promontory leads to delusive diagnosis. Brodie, in his lecture, alludes to a case in which a worthy practitioner had spent over one hundred and fifty hours in dilating a supposed stricture situated high up. The treatment had extended over a period of a year. Brodie, who was present at the post-mortem examination, found that there was no sign of a stricture, the bougie becoming arrested by a curve of the sacrum.—*Boston Medical and Surgical Journal*, September 13, 1894.

#### THE TECHNIQUE OF CURETTAGE.

M. SÄNGER (*International Journal of Surgery*, September, 1894) states that, aside from the infectious, gonorrhœal forms of chronic endometritis, the most frequent and important varieties are endometritis, menorrhagica, and hypersecretoria. For the former (endometritis interstitialis, fungosa, climacterica) the best treatment consists in curetting, followed after a few days by the application of caustics. In endometritis hypersecretoria, which is usually limited to the cervix uteri, irrigation, gauze "drainage," and cauterization are especially indicated. Irrigation must be preceded by dilatation of the cervix with laminaria tents, and rarely effects a cure unless associated with other measures. As a preparatory procedure to cauterization, washing out the uterus with a soda solution is of service. The use of gauze tampons, especially of medicated gauze, has a favorable action, although they should not be regarded as promoting drainage. They have the disadvantage of requiring to be frequently renewed. This objection does not apply to cauterization; the stronger the caustic the less frequently it has to be repeated. Säger believes that in general the cauterization resorted to is too mild and too frequently repeated. Among caustics he prefers a fifty-per-cent. solution of chloride of zinc, which is suitable for catarrhal as well as chronic, infectious, and menorrhagic forms. In cases where the cervical canal is narrow, however, in virgins and

nullipara, weaker solutions are in place. If a fifty-per-cent. solution be employed, the application should not be repeated until the end of sixteen to twenty days. For cauterization, Snger employs a long, thin, silver sound.

#### DIAGNOSIS AND TREATMENT OF PROSTATIC ENLARGEMENT.

BELFIELD (*Indian Medical Journal*, August, 1894), in the following sentences, expresses his views on this subject :

While the etiology of prostatic enlargement still remains a matter of speculation, it is certain that the earliest clinical symptoms are due to vascular engorgement of the prostate and, by consequence, of the bladder. The actual increase in the size of the gland should not obscure the other factors in producing the symptoms, which may be out of all proportion to the perceptible enlargement. The factors contributing to the familiar symptoms associated with prostatic enlargement are :

1. Venous congestion and dema of prostate and bladder.
2. Fibroid thickening of the vesical (prostatic) sphincter, often extending to the detrusor and to the prostate.
3. Suppuration in the prostatic urethra (glands and utricle).
4. Hypertrophy of the prostatic elements (glandular or muscular, or both).
5. Chronic retention of urine, due to any one or all of these four antecedent conditions.

The most important as well as the most difficult task in diagnosis is the differentiation among these various morbid states ; for the prognosis as well as the treatment is determined by the predominance of one or another of them. For example, a prostatic patient complains of frequent and painful urination ; the chief trouble may be an aggravation of the usual venous congestion, in which case a brisk laxative, suppositories of ichthyol, and ergotin and strychnine internally will secure speedy relief. Again, the symptoms may be due to prostatic suppuration, in which event irrigation of the deep urethra with hot water containing hydrastin or silver nitrate is needed ; or the frequent urination may be simply the overflow of a distended bladder, which is relieved by the cautious daily use of a clean catheter.

It should be remembered that the symptoms clinically associated with prostatic hypertrophy depend upon several distinct morbid conditions, of which the mechanical impediment to the exit of urine may be the least ; and that no

routine treatment can be prescribed, the requirements varying with the case.

Our resources for meeting the needs of different patients may be thus summarized :

1. *Medical*.—(a) Improvement in the blood circulation through prostate and bladder is favored by proper diet and exercise, avoidance of constipation, massage of prostate between a sound in the bladder and finger in rectum, and by the daily use of a clean catheter ; internally, ergotin and strychnine are certainly useful.

(b) Suppuration in the bladder neck requires irrigation of the prostatic urethra with hot water, solutions of hydrastin, silver nitrate, etc., in addition to the measures already mentioned.

(c) Induration and distortion of the bladder neck may be improved by dilatation with large sounds or a special dilator.

In a certain percentage of cases the time arrives, sooner or later, when these measures fail to relieve, and more efficient and immediate aid must be rendered.

2. *Surgical Methods*.—(a) The simplest is puncture of the membranous urethra from the perineum and introduction of a drain, which is permitted to remain for a couple of weeks. The subsidence of congestion and dema, and the cleansing of the bladder thus induced, sometimes makes an apparent cure for many months. Puncture with a trocar through the prostate (Harrison), or drainage of the bas-fond behind the organ, is even more desirable.

(b) By a perineal urethrotomy the surgeon can secure not merely drainage, but also thorough digital stretching of the prostate and the incision or excision of obstructions at the orifice of the bladder.

(c) More satisfactory excision of prostatic obstructions has been accomplished by a combination of suprapubic cystotomy with perineal urethrotomy,—now a standard operation.

Within the past year there have been reported attempts to relieve the sufferings of the prostatic by securing atrophy of the enlarged prostate ; by Bier, through ligation of the internal iliacs, and by Raum,\* through castration. Bier reports three cases ; in one, death from septic peritonitis occurred ; in the remaining two, marked reduction in the size of the gland and decided improvement in symptoms

\* The credit of proposing castration as a means of producing prostatic atrophy undoubtedly belongs to Dr. J. William White, though Raum was probably the first to make a practical application of the proposal on man.—Ed.



are reported. Castration alone is said to have accomplished a cure in Raum's two cases.

Two new operations upon the enlarged prostate itself have been recorded; one by Nicoll, who made a submucous removal of the entire prostate from the perineum in two cases with good result; the other, by Belfield, combines the removal of any part or all of the prostate with perfect drainage of the bladder and deep urethra. By incision into the ischio-rectal fossa, the prostate and trigone are laid bare and incised in the median line; each half of the prostate can be enucleated to any desired extent. A suprapubic incision—robbed of its danger by the perfect drainage secured through the posterior wound—can be made, if required for freedom of manipulation. This operation seems to meet all the indications of all cases. Like most other operative procedures, it is undoubtedly too severe for feeble patients to endure.

#### ABSCESS OF THE APPENDIX.

During a recent clinic MCBURNEY (*International Journal of Surgery*, September, 1894) presented a case of more than usual interest and one rarely met with. Three weeks prior to admission the patient had been in good health, when she was seized with a pain in the right iliac fossa, together with nausea and vomiting. The pain continued to increase in severity up to the time she entered the hospital, ten days before. She had a temperature of 101° F., pulse rather feeble, abdomen slightly tender on pressure, but with the walls relaxed. On palpation, a tumor in the right iliac fossa could be readily felt, which was not adherent to its walls, nearly spherical in shape and nodular in character. The history of the case was not of much aid in arriving at a diagnosis. There was no reason to believe that the tubes and ovaries were affected, and although the tumor was situated very near the pelvis, it did not extend into that cavity. There was no distention or obstruction, such as would be caused by a tumor in or around the intestine, thus pointing to the origin of the tumor as an abscess of the appendix.

As the patient was not suffering from high fever, nausea, or distention, the trouble being entirely localized, operation was postponed. The next day the tumor had entirely disappeared, and, unfortunately, no attention had been paid to the character of stools, which might have afforded an explanation of this occurrence. There is no doubt that she had an abscess of the appendix, which evacuated itself into the intestine through a new passage. The

patient was in a more comfortable condition and the pain entirely allayed. Close examination of the abdomen revealed an induration of the tissues at the site of the original tumor. The patient continued to have fever, though somewhat reduced in intensity since that time. Her condition remained about the same. Slight abdominal tenderness, but no distention, was present, and the bowels were active. In cases of this kind, where the abscess has burst into the intestine, some patients have continued in good health and been entirely cured. On the other hand, cases with this history sometimes suffer from repeated recurrences, until an operation has been done for their final cure. In such cases, on cutting down, the reporter has found the appendix entirely separated and lying quite loose in the mass of connective tissue forming the wall of the abscess, the opening in the gut still existing.

Therefore, McBurney advised operation in the above case. He calls attention to the fact that cases of appendicitis differ very greatly in character. Incisions made through the abdominal wall must be adapted to the requirements of each case. In some cases the appendix can be removed with perfect ease through a very small incision, say one and a half inches in length, but to apply such a method, as recently described in some of the journals, indiscriminately to the different cases, and to adopt a standard incision for abdominal section, is useless. The incision must be adapted to the character of the case to be operated on; we should not accept any method of entering the peritoneal cavity through a small opening in operating for an extensive disease. If we know by experience that the disease is small in extent, then we can remove the appendix through a small aperture with advantage. This, of course, does not apply to the cutaneous incision.

The operator, after cutting down to the appendix, found an abscess cavity. The appendix was removed and the opening in the intestine sewed up. The patient was in such a condition that the removal of the diseased appendix seemed the only course to prevent an imminent attack of appendicitis.

#### CÆLIOTOMY IN TYPHOID PERFORATION.

A case of operation of this nature is reported in the *British Medical Journal*, No. 1783. The patient was in the fourth week of the typhoid fever. Symptoms of perforation developed, attended by collapse. The abdomen was opened as soon as the patient reacted. Perforation was

The bismuth is added to prevent irritation of the mucous membrane of the rectum.—*Medical and Surgical Journal*, August 4, 1894.

#### VOMITING OF PREGNANCY.

A writer in the *Lancet* says, "I have not failed once for many years, by a single vesication over the fourth and fifth dorsal vertebræ, to put an end at once to the sickness of pregnancy for the whole remaining period of gestation, no matter at what stage I was consulted. The neuralgic toothache and pruritus pudendi of the puerperal condition yielded as readily, and to one application."—*Medical and Surgical Journal*, August 4, 1894.

#### IVY-POISONING.

A current number of the *Sanitarian* advises the application of Labarraque's (solution of chlorinated sodium) solution in this irritating affection. It should be applied in full strength by means of a pledget of lint or diaper cloth kept constantly wet with the liquid; it will afford relief immediately.

#### SEPTIC OSTEITIS IN CHILDHOOD.

A lecture on this subject was recently delivered by Mr. EDMUND OWEN at the London Hospital for Sick Children, and is reported in the *Lancet* for May 26. Mr. Owen believes that a diagnosis of rheumatism is sometimes erroneously made, when the condition present is, in fact, osteitis due to some septic infection. This may occur without a history of local injury, but usually some illness has seriously disturbed the patient's nutrition. In such circumstances all the tissues of the body are rendered uncommonly susceptible to infection, and it is not strange that the delicate new bone at the end of the diaphysis should suffer. Any septic micro-organisms which have gained entrance into the body might readily implant themselves in this region of slight resistance. Here they would undergo prolific cultivation, secreting their ptomaines to poison the blood and disturb the nervous system. Two cases were presented illustrating this condition. In neither case could a satisfactory cause be discovered. Sometimes the disease is acute and fulminating, and carries the child off before a diagnosis has fairly been made. In others, as in the cases mentioned, it is slow, and simulates articular rheumatism in many respects. Unlike rheumatism, however, the heat, the swelling, the pain,

and the tenderness, although close to the articular area, do not involve it. The tenderness is limited to the region of the bone close below the junction cartilage, and at this point there is a definite thickening. In articular rheumatism the swelling, the fulness, and the redness are confined to the area of the synovial membrane, and there is no thickening about the bone; the results of treatment also aid in diagnosis. The relief of the symptoms of acute rheumatism is, as a rule, so prompt under the use of salicylic acid that an increase in the severity of the articular signs, or even a lack of any improvement after a few days, should arouse suspicion and call for a more thorough and careful investigation. The diagnosis should be made as promptly as possible, for error and delay lead to lamentable results. The treatment is essentially surgical. Incision should not be delayed until the presence of pus is demonstrated. Delay allows the septic inflammation to make irremediable havoc, so that the sooner the area of disease is attacked and cleared out the better. To wait for fluctuation is to give the staphylococci and other micro-organisms full opportunity to do their worst. The incision should be through the periosteum, and, if any pus is here confined, a free opening should be made. The diaphysis should be trephined to give free exit to all septic matter pent up within the bone.—*New York Medical Journal*, August 4, 1894.

#### SPLENECTOMY.

CONKLIN (*Medical Record*, July 28, 1894) reports a successful splenectomy. The patient, Mrs. A., American, aged twenty-nine, married, multipara, was admitted into St. Elizabeth Hospital, May 29, 1893. Her family record is without taint, menstruation normal, and general health but little impaired. Mrs. A.'s early life was passed in a highly malarious district in Southern Illinois, and up to her marriage and removal to Ohio she was subject to frequent attacks of chills and fever, and carried almost constantly an "ague cake" in her side. She had been free from malaria for several years, and, aside from an attack of typhoid fever, has had no serious acute illness. Two years before she began to have abdominal and pelvic pains, and some months later discovered a lump low in the abdomen. Examination disclosed a solid, freely movable tumor, sensitive to touch, in the left iliac region, dipping into the pelvis, but not connected with the uterus, and a small cyst of the right ovary. The uterus was normal in size, but retroverted.

Dr. Jewitt made a coeliotomy June 10, 1893. The solid tumor proved to be a displaced spleen about twice the normal size. It was free from adhesions and easily replaced. The right ovary, containing a cyst the size of a small orange, was removed; left ovary normal; convalescence was uneventful. She was soon discharged, with positive instructions to wear constantly a properly fitting abdominal supporter, with the hope of retaining the spleen in position.

Mrs. A. was readmitted into the hospital during the author's service, September 23, 1893. Shortly after her return home she again began to suffer from pelvic symptoms, and for the past two months had nearly continuous abdominal soreness and several severe paroxysms of pain, which drove her to bed. Her abdomen had been steadily enlarging.

Six days ago, while doing the family washing, she was seized with agonizing pain in the abdomen, which required for its control the administration of morphine. Vomiting of large quantities of bile-colored fluid began on the following morning, and still recurred. In spite of treatment, the bowels refused to move for more than a week; temperature normal.

On examination, the abdomen was found tympanitic, very sensitive to pressure, and occupied by an immovable, solid tumor, which completely filled the left side from the pelvis to the ribs and extended considerably beyond the middle line; it could easily be touched per vaginam.

The former operation greatly simplified the diagnosis, and left no doubt that the tumor was the enlarged and inflamed spleen. The acute symptoms were attributed to intestinal obstruction, due either to pressure from the spleen or to adhesions at the seat of the ovarian stump. The symptoms grew steadily worse until forty-eight hours after admission, when the bowels responded freely to treatment, after which the vomiting ceased and her general condition improved. The respite was of short duration. The local tenderness, paroxysmal pains, and vomiting returned, accompanied by fever. The temperature ranged from 99° to 101° F. for ten days, and measured 100° F. on the morning of the operation. Peritonitis had evidently supervened, and at a consultation of the hospital staff it was decided that the removal of the offending spleen offered the only chance of recovery.

The operation was performed October 7. The parietal incision, seven and a half inches in length, was made along the outer border of the left rectus. On exploring the spleen, contrary to expectations based on the revelations

of the previous operation, it was found adherent to the abdominal wall, omentum, and intestines. The intestinal adhesions especially were firm and extensive, involving the entire under and inner surfaces of the tumor. Their separation consumed much time, the capsule of the spleen being torn in several places. The peritoneum gave unmistakable evidences of active inflammation. The pedicle was long, twisted through three complete turns, and, with its engorged and tortuous vessels, resembled a huge umbilical cord. It was transfixed, firmly tied with heavy twisted silk, using the Staffordshire knot, and for greater security encircled with another turn of the ligature. The ligature was cut short and the pedicle dropped, a glass drainage-tube placed, and the wound, on account of the patient's condition, hastily closed.

The hemorrhage was slight and easily controlled. The shock was profound and wholly out of proportion to the blood lost or the length of the operation. Hypodermic injections of brandy and strychnine were freely used. Apart from the shock, which threatened to prove fatal for hours after removal to bed, and the temperature, which for twelve days measured from 99° to 101° F., precisely as it had before the operation, there was nothing worthy of special comment during convalescence. At no time was there swelling of the parotid or lymphatic glands. The spleen, drained of its blood, weighed four and a quarter pounds and measured ten inches in length by five and a half in breadth. It was firmer in texture and darker in color than the normal gland. Microscopical examination showed thickening of the trabecular and intercellular connective tissue and pigment in the vessel walls. By an oversight, no microscopical examination of the patient's blood was made before or soon after the operation; at present the proportion of the red and white corpuscles is normal. Seven months after the extirpation, Mrs. A. has grown very fleshy, and reports excellent health, save an overpowering drowsiness.

After a summarizing of the literature on the subject, Zenner concludes that the present position of splenectomy may be briefly epitomized as follows: It is unjustifiable in leucocythæmia or other conditions in which there is extensive involvement of the lymphatic glands or a notable increase in the white blood-corpuscles.

It is indicated in tumors, simple hypertrophies, and other splenic enlargements which have proved rebellious to simple measures and are attended with danger or serious disability.

In movable or displaced spleens requiring

interference, extirpation is preferable to operative fixation.

Severe traumatism of the spleen, with or without an external wound, or simple prolapse of the gland into a parietal wound, demand, as a rule, immediate extirpation. In cases of protrusion, experience shows that excision, partial or total, is a safer procedure than mere replacement.

Removal of the spleen for cystic disease has an excellent record, but most authors advise a preliminary trial of incision with drainage. In abscess it is better, except in rare cases, to incise and drain than to attempt removal of the organ.

#### OSTEOPLASTIC RESECTION OF THE SACRUM.

It is now generally admitted that the only way of dealing effectively with certain ailments of the rectum, especially in its upper parts, is by approaching the seat of disease from the posterior wall of the pelvis. KAMMERER (*Medical Record*, July 28, 1894), with this sentence, begins an able article recording in detail six operations performed by himself, with satisfactory results. He advocates Rydygier's procedure, which is as follows: The soft parts are incised, beginning at the posterior superior spine of the ilium on the left side and running down to the tip of the coccyx, thence in the median line to the anus. After division of the sacro-sciatic ligaments, the soft parts are removed from the anterior surface of the sacrum by the hand of the operator. A transverse incision is then added below the third sacral foramen, and the bone divided along this line with a chisel. A flap is now turned to the right side. With a retractor inserted at the tip of the flap, the latter can be easily held aside and manipulations about the rectum can be as readily carried on as when the bone has been entirely removed. The author has been impressed in all his cases with the rapidity with which this preliminary operation can be done and the absence of profuse hemorrhage. He fully endorses Rydygier's claim that his osteoplastic resection is a much less bloody operation than the permanent removal of coccyx and sacrum by any one of the other methods, with dissection of the soft parts from the posterior surface of the sacrum. In only one instance did Kammerer meet with considerable hemorrhage; here he operated in the lateral position. The knee-elbow position was employed in all the other cases, with distinct elevation of the pelvis, especially of the sacral region, the writer declaring this to be the most

desirable one for rectal surgery, since it controls hemorrhage through elevation, gives excellent access to the field of operation, the surgeon standing between the slightly separated thighs of the patient, also facilitating manipulations with the chisel, the pelvis being supported by sand-bags placed under the anterior iliac spines.

When the flap, including the coccyx, part of the sacrum, and the integuments, can be, from the nature of the case, returned to its place and sutured, the result will be an ideal one as regards restitution of the normal contour of the sacral region. In suturing the transverse incision the author always passes the needle down to the bone, but never includes the bone itself in a suture by any device whatever. Notwithstanding, in several cases in which he has had to elevate the flap a second time, he has always found firm union of bone surfaces, either fibrous or partly osseous. It is unfortunate that secondary operations so frequently become necessary in rectal surgery, for even when we have resected the rectum and made a circular suture of the ends, we frequently find that the latter gives way on the posterior circumference of the bowel. The operation of raising the flap a second time is no more tedious than the first. Greater care must be exercised to avoid the rectum, which now has been drawn close to the anterior surface of the sacrum by cicatricial contraction. When we are dealing with cases, such as fistula, where tamponade of the wound-cavity becomes necessary for some time, we should not suture the flap, but leave the wound-cavity entirely open. The author had good proof of the advisability of this procedure from his fourth case, where he got very good union of the transverse and vertical incisions, but in which a successful tamponade of the deep wound-cavity (about six inches) was not easily effected through the small opening corresponding to the unsutured part of the original incision. To this fact he attributes the ultimate re-establishing of a small vaginal fistula. Such wounds ought to heal from the bottom of the wound-cavity, to avoid even the slightest retention endangering the object in view, and the best guarantee for this is a wide opening, allowing free inspection and tamponade.

Where no sutures are used, some retraction of the flap develops after a time. There is no doubt much less than in flaps that are without a bony substratum. Even when only the lateral incision to the left of the sacrum has remained open, a distinct elevation of the soft parts over the sacrum results from the same cause,—a deformity which can, no doubt, at the proper time, be very readily remedied by an insignifi-

cant plastic operation. This is not so readily accomplished when no suturing at all has been done.

After some time secondary operations on the rectum are even more difficult than the original ones, owing to the development of much cicatricial tissue about the gut, which makes the latter more rigid, and does not, in consequence, permit the approximation of such parts which we may desire to unite by sutures. From all this we may conclude that it will be wise to do secondary operations as soon as the condition of the patient will permit.

The cases of fistula reported have not been entirely cured. They have been much benefited, and one of them is very likely closing. An anterior laparotomy would certainly have been unwise in any of them.

While technically difficult, the sacral route is still the easiest way to get at the seat of disease when the rectum is affected, and also in some cases in which the uterus is to be dealt with. Rydygier's preliminary operation is certainly well devised, and being as simple as the permanent resection of the sacrum, while not disfiguring, assuredly deserves preference.

#### HYPERSECRETION OF THE SWEAT-GLANDS OF THE FEET.

Against sweating feet, LÉGOUX (*Thérapeutische Blätter*, Wien, July, 1894) recommends,—

R. Liquor ferri sesquichlor., 30;  
Glycerini, 10;  
Ol. bergamot, 20. M.

Sig.—Apply with a brush each morning.

#### DANGERS OF GLYCERIN INJECTIONS INTO THE UTERUS FOR THE PURPOSE OF INDUCING PREMATURE LABOR.

EMBDEN (*Medical Record*, July 28, 1894) gives an extract of Pfannenstiël's article concerning the dangers connected with intra-uterine injections of glycerin for the purpose of inducing premature labor, and reports the history of two cases treated by the same writer, as well as one of his own. As a result of the above studies, he concludes that Pelzer's method is liable to occasion indisputable symptoms of glycerin-poisoning. This will be a death-blow to the method.

Concerning the first case, the glycerin cannot be considered the cause of the woman's death, as she suffered from nephritis. It is, nevertheless, remarkable that there was found a small

quantity of blood-colored water in the bladder, the urine being entirely free from blood in the last days before the injection was performed, as shown by frequent examinations. Pfannenstiël tries to find the cause of this in the injected glycerin.

The second case was undoubtedly a case of glycerin-poisoning, and although it did not damage the future health of the woman, it kept her in danger for some time. The woman was in perfect health up to the time of the injection; the urine was normal. One hour afterwards she had symptoms of glycerin-poisoning.

In the author's case there was a woman with nephritis, but there was not noticed at any time before the injection any trace of blood in the urine. After the delivery there was a good quantity of a dark-red urine in the bladder. In examining the same, Embden failed to find any red blood-corpuscles, but there was a large amount of hæmoglobin. The explanation of this appears to be a decomposition of the blood, brought on by the injected glycerin.

This does not seem so very strange, as we know—according to Pfannenstiël—that glycerin is liable to occasion a decomposition of the blood, as has been shown by numerous experimenters with dogs and rabbits, the hæmoglobinuria caused by glycerin bringing on a glomerulo-nephritis, followed, after the injection of more glycerin, by interstitial nephritis as well as by interstitial hepatitis.

It is, of course, strange that neither Pelzer nor others met with a similar accident after injections of glycerin.

Pfannenstiël finds an explanation of this in the fact that Schwan, Lebedeff, and Filehne have shown that in rabbits, when the glycerin is brought under the skin, hæmoglobinuria always occurred, but that it did not occur, or in a slight degree only, when it was injected directly into the veins. Without giving an explanation of this, Pfannenstiël deems it possible that, in Pelzer's cases, the glycerin was very rapidly absorbed by the circulatory system, while in his cases it acted in the decidua uteri as if it had been injected by the hypodermic method.

The writer's case is particularly interesting from the fact of the icterus following the hæmoglobinuria. It seems indisputable that this was caused by the decomposition of the blood poisoned by glycerin. The writer rather leans to the belief that the semi-comatose condition which appeared in his patient was brought on by the same cause; it did not look like a uræmic coma. Another danger of the injec-

tion of concentrated glycerin is the possibility of a thrombosis. Another objection to this method, in common with all injections of fluid of any kind between the uterus and the foetal sac, is the possibility of air entering the circulatory system.

Finally, the writer asserts that Pelzer's method should not be used at all for the purpose of inducing premature labor; more especially is it to be avoided in cases of nephritis.

#### FISTULA OF THE STOMACH IN A CHILD.

A child aged six years swallowed by mistake some hydrochloric acid, following which developed an oesophageal stricture, and gastrotomy was performed. Later gradual dilatation of the oesophagus was practised, and eventually food was introduced by means of a catheter passed through the mouth. At the time he was brought to the service of Dr. CHORON (*La Presse Médicale*, July, 1894) the patient was suffering from marasmus and emaciation threatening his life, and closure of the artificial opening was attempted to stop the continuous outflow of gastric juice and mucus, which was causing an eczematous condition of his entire abdomen.

The stomach was irrigated with a three-per-cent. solution of boric acid. The opening was excised, with a small collar of skin around it. The opening in the abdominal wall was now enlarged towards the left costal border.

With curved scissors the stomach was separated from the abdominal wall. A wound of the liver was tamponed to arrest hemorrhage.

The stomach was sutured with catgut, the other structures with silk (No. 1); first a Lembert suture to the serous membrane, then the muscles and skin received each a separate suture.

#### TREATMENT OF CHRONIC GONORRHEA.

Before the Society of Internal Medicine at Berlin, ROBERT KUTNER (*La Presse Médicale*, July, 1894) demonstrated the advantages of graduated instillations, basing his reasons upon two observations: 1, that gonorrhoea in the chronic form shows itself in circumscribed places; 2, that the introduction of the olive-tipped sound produces more pain at these localities than at other points in the canal.

First, with a *bougie à boule*, he measures the distance of these sensitive spots from the meatus. He then introduces a syringe with a hollow sound adjusted to the point, and applies silver nitrate (one per cent., ten per cent., or twenty

per cent.) or copper sulphate to the spots previously located by his measurements.

The advantages of this method are,—

1. Exact location.
2. Energetic action of the medicine exactly placed.
3. Less reaction.
4. Economy of time.
5. Simplicity of the procedure.

#### TREATMENT FOR ACNE VULGARIS.

PHILIPPSON, in *Therapeutische Monatshefte*, November, 1893 (*Monat. Praktische Dermat.*, July, 1894), says that the causation of acne is still so uncertain that the treatment must be symptomatic.

The pustules are opened and the contents pressed out; then he cuts through the induration; over this a fifty-per-cent. salicylic plaster is laid. Compresses of lead-water and acetic acid soften the skin, cause the pustules to disappear, and relieve the irritation.

For the milder forms, soap, salicylic acid, naphthol, resorcin, and sulphur are recommended.

The following formulæ are used at Lössor's clinic in Berlin:

1. R Naphthol, 10 parts;  
Vaseline,  
Saponis viridis, of each, 20 parts;  
Sulphur præcipitatus, 50 parts.  
M. et fiat pasta.
2. R Camphor trit.,  
Vaseline, of each, 10 parts;  
Pulv. cretæ albæ, 5 parts;  
Saponis viridis, 15 parts;  
Sulphur præcip., 50 parts.  
M. et fiat pasta.
3. R Resorcin,  
Amyli puri, of each, 5 parts;  
Vaseline, 15 parts;  
Zinci oxidi, 5 parts.  
M. et fiat pasta.

These pastes can be applied until inflammation follows, or can be washed off in a quarter to a half-hour, and can be followed by powders.

The first two are best used in the latter manner, while the third is milder. For the mildest forms, where single pustules are found, the following wash is used:

- R Acid. acet. conc.,  
Tinct. benzoës,  
Spirit. camphor., of each, 6 parts;  
Spirit., q. s. ad 100 parts. M.

Sig.—Apply with sponge night and morning.

*PELVIC EXUDATE.*

In a series of papers with the above title, PROFESSOR BIRNBAUM closes with the following therapy (*Der Frauenarzt*, July 7, 1894):

The best prophylaxis is a thorough antiseptic handling of each childbirth, each operation, or other manipulation of the genitalia.

The special treatment is necessarily local, since the fever and constitutional symptoms are dependent upon the local process.

Of prime importance is the removal of irritation or anything causing congestive changes or which obstructs the backward flow of blood, and avoiding unnecessary movements or internal examinations.

So long as fever and pain denote continuance of inflammation, cold compresses, ice-bags, or water of moderate temperature are employed to counteract it.

Kisch recommends for the acute stage intravaginal applications of cold by means of a special irrigator.

For plethoric patients bloodletting is recommended early in the childbirth by applying from six to ten leeches in the inguinal region of the affected side.

Not so strongly recommended is the use of leeches to the vaginal wall, owing to the irritation and the danger of infection.

The ice-bag is used only so long as the pain continues; then water compresses (22° to 25° C.) are resorted to, which may be continued for hours, under which treatment the absorption often goes on to completion.

The much-lauded use of unguent. cinereum, or ointment of potassium iodide, has yielded less prompt results than the water applications.

Where foul-smelling lochia are present, the vagina is washed out many times a day with sublimate (one-tenth per cent.) or carbolic-acid solutions (one to two per cent.).

For the fever, when it is very high and persistent, large doses of cinchona, antipyrin (cautiously), sodium salicylate, digitalis with acid, and the like drugs are employed.

If, in spite of this, the exudate goes to pus-formation, it is still possible to have absorption by the use of compresses. But when the continued high fever denotes the presence of pus, then drainage of the collection is required.

When there is a tendency to point externally, applications of flaxseed poultices, etc., are made.

When fluctuation is detected, an incision is made above Poupert's ligament, from one to two centimetres and two to three centimetres from the anterior superior iliac spine.

When fluctuation is not positive, exploratory puncture is recommended.

From the rectal region it is more difficult to remove the collection, but exploratory puncture may also be tried through the vagina. After opening in this situation, it is well to employ drainage.

When the abscess breaks into the rectum or bladder, without sufficient drainage, Byford recommends inserting a sound through the abscess opening, turning the point against the vaginal wall and cutting against the point of the sound.

If the exudate does not go on to pustulation, then iodine, internally as well as externally, is employed.

Painting with tincture iodi, inunctions of iodine, and potassium iodide ointment, or the rubbing of potassium iodide and lanolin into the abdominal wall.

Painting the cervix and vaginal mucous membranes with the tincture of iodine, or with iodine and glycerin, followed by dusting with iodoform, is also advised.

In anæmic patients the use of iodine must be guarded.

After iodine, cold, lukewarm, or hot irrigations, with or without addition of medications, are recommended.

The use of massage is recommended with caution, suppuration contraindicating this.

Electricity has not proved a success.

Mercury as inunction and internally is used where gonorrhœal cause is suspected.

Naturally, in each case good diet, iron, quinine, wine, and similar tonics must be used, and the patient must not be allowed to leave her bed too early.

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*THE VAGINAL ANUS AND ITS TREATMENT.*

BUCKMASTER (*New York Medical Journal*, August 11, 1894) gives a carefully condensed report of the literature throwing light on this much vexed subject, with a detailed description of the methods he has employed in overcoming the deformity.

There are so few cured cases that it is easy to explain the attitude of conservative men towards operative procedure. It is important to classify the cases, that we may determine which are fit for operation. It is convenient to divide the cases into two classes. The first class comprises those patients who have control, and the second class includes those patients who pass their fæces involuntarily. The first class is not large in number, and if the patient will take

precautions to preserve cleanliness, and if the opening is large enough to pass formed fæces, operation is not advisable. A douche after each movement will in some cases prove sufficient to keep the patient comfortable. If such precautions are neglected, the mucous membrane of the vagina will become excoriated and abscesses may form in the connective tissue. If, in spite of this advice, the patient should still desire an operation, the results are sufficiently good and the dangers under sufficient control to warrant compliance with her request.

The second class, or those who have no control, includes the great number of cases. Most of them are recognized shortly after birth, and unless the opening is so small that it obstructs the passage of fæces, nothing need be done until a later time. Fæcal matter in healthy young infants is quite unirritating, but as the character of their food changes it may cause great trouble; for this reason careful attention should be given to the diet. It is easier to mould the tissues after the child is fifteen years of age than before this time, but it is not necessary to wait on this account.

In considering the dangers of the operation, we must not forget that all of the fatal cases occurred in a day before antiseptic surgery was understood. The operation the author describes is not more dangerous, he states, than that used to restore a ruptured sphincter. It is used particularly in those cases where there is no control. In cases where the patient has control, and it is necessary to free the bowel for some distance, there is more risk. A number of deaths have been recorded, but with the better technique of to-day the risk is no longer great if the patient be healthy.

The first step in the operation is to introduce a probe into the fistula from the vagina, and bring out the point of this instrument just above the levator ani muscle, the tissue above the probe being divided. The skin should be pierced in front of the lower part of the sling formed by the fibres of the levator ani muscle. The location of this muscle should be ascertained, if possible, before the patient is etherized. When the tissues above the probe have been divided, the rectum is seen, is divided, and may be slightly freed by a few strokes of the knife. It must be remembered that the backward extent of the incision only indicates the backward limit for the plane in which it is found; the skin is divided about an inch farther back.

The next step is to draw the rectum to the skin, and here one is very apt to make a mistake.

The rectum should be fastened to the skin without strain. If proper ligature material be used, and the strain is not too great, the sutures will never cut out, but will become embedded in the tissue, as is the case in all plastic work. On the second day after the writer first operated, he found that the strain had been too much for his stitches, and was obliged to cut those at the sides and place a new one in the middle of the wound; this entirely removed undue tension. If the tension had been too great, he would have drawn the rectum down as far as possible without strain, trusting to a future operation to reach the skin. By careful attention to this caution we can never fail to gain something, and it is only a question of time when the rectum can be securely anchored to the skin. It is important to bear in mind that if union of the rectum to any point of the skin is secured, no matter to how slight an extent, it is not a difficult matter to bring the remainder of the circumference of the bowels in the desired position at a later period.

Having united the rectum to the skin, the raw surfaces left at the side are sewed together. After the completion of the first step, the rectum opens below the vagina, and no raw surfaces are left. The patient can be on her feet in ten days.

The second step of the operation consists in forming that part of the pelvic floor which is usually known as the perineal body. It will differ very much in different cases, as the distance between the abnormal opening and the urethra varies. It cannot be properly done except by an operator who is a good plastic surgeon.

The third step suggests itself on theoretical grounds; the author has not yet had opportunity to put it into practice. He means to split the fibres of the levator ani muscle, as has been done with the rectus muscle in gastrotomy. If this is practicable, we ought to obtain a fairly good sphincter. It is not unlikely that those cases which have gained control after operation have done so by having the muscle, which has been divided, grow about the rectum.

#### FIXATION IN THE TREATMENT OF FRACTURES INTO JOINTS.

In an interesting discussion of this subject by COOK (*International Journal of Surgery*, August, 1894) the following conclusions and rules of treatment are laid down:

1. That bony or serious fibrous ankylosis is the result of injury and subsequent inflammation and not of immobilization.



2. That early passive motion only disarranges the fragments of bone, thereby increasing the production of callus; that it irritates the injured ligaments and, by increasing the inflammation, tends to produce the ankylosis it is thought to prevent.

3. Immobilization is useful only when active inflammation is present, or until the ruptured ligaments and broken bones have thoroughly united.

4. The logical treatment of a fracture into a joint, therefore, should be rest and local applications to reduce inflammation. Reduction of the fracture as early as possible, then immobilization until the bones and ligaments have united (from three to eight weeks, or more, according to circumstances).

5. Passive motion, massage, and use till the tissues become normal, or, if the massage fails, complete rupture of all adhesions under an anæsthetic. The factors which will ultimately determine ankylosis are the nature of the original injury, the character and duration of the subsequent inflammation, the destruction of bone and cartilage, cicatricial contraction of the soft tissues around the joint, and the age and condition of the patient.

#### DANGERS OF THE LONG RECTAL TUBE.

It has long been a disputed question as to whether the long rectal tube can safely be passed into the sigmoid flexure. In this relation the opinion of Mr. HARRISON CRIPPS in a recent number of the *British Medical Journal*, is of interest.

In spite of the condemnation of the long rectal tube by Brodie, Treves, and many other eminent authorities, he still finds that in most cases of obstruction or supposed obstruction the tube has been introduced. Fortunately, these tubes are fairly soft, so that in a capacious rectum, when they impinge and are arrested about opposite the promontory of the sacrum, they simply coil up and do no harm. If stiffer ones are used, the patient's life is placed in imminent risk. A patient at St. Bartholomew's Hospital was to be operated on for ruptured perineum. In order to increase the supposed efficacy of the injection, a quart of soap and water, with some ounces of oil, were injected by means of a long tube; the injection never returned. A few hours afterwards, owing to the acute symptoms, Mr. Cripps assisted one of his colleagues in opening the abdomen. The soap and water and oil were found in the abdominal cavity, and a hole below a reduplicated fold in the upper part of the rectum.

The patient died. He says that the idea that these tubes can be generally passed into and beyond the sigmoid flexure is a pure delusion, save in the rarest circumstances. As a means of diagnosis, or of treatment of stricture beyond the reach of the finger, tubes of any kind are absolutely useless. If a stricture is actually present, it would be 100 to 1 against the long tube or bougie entering it, for it would almost certainly catch in the cul-de-sac generally caused by the invagination of the stricture. If a stricture is not present, the arrest of the bougie by the sacral promontory leads to delusive diagnosis. Brodie, in his lecture, alludes to a case in which a worthy practitioner had spent over one hundred and fifty hours in dilating a supposed stricture situated high up. The treatment had extended over a period of a year. Brodie, who was present at the post-mortem examination, found that there was no sign of a stricture, the bougie becoming arrested by a curve of the sacrum.—*Boston Medical and Surgical Journal*, September 13, 1894.

#### THE TECHNIQUE OF CURETTAGE.

M. SÄNGER (*International Journal of Surgery*, September, 1894) states that, aside from the infectious, gonorrhœal forms of chronic endometritis, the most frequent and important varieties are endometritis, menorrhagia, and hypersecretoria. For the former (endometritis interstitialis, fungosa, climacterica) the best treatment consists in curetting, followed after a few days by the application of caustics. In endometritis hypersecretoria, which is usually limited to the cervix uteri, irrigation, gauze "drainage," and cauterization are especially indicated. Irrigation must be preceded by dilatation of the cervix with laminaria tents, and rarely effects a cure unless associated with other measures. As a preparatory procedure to cauterization, washing out the uterus with a soda solution is of service. The use of gauze tampons, especially of medicated gauze, has a favorable action, although they should not be regarded as promoting drainage. They have the disadvantage of requiring to be frequently renewed. This objection does not apply to cauterization; the stronger the caustic the less frequently it has to be repeated. Säger believes that in general the cauterization resorted to is too mild and too frequently repeated. Among caustics he prefers a fifty-per-cent. solution of chloride of zinc, which is suitable for catarrhal as well as chronic, infectious, and menorrhagic forms. In cases where the cervical canal is narrow, however, in virgins and

nullipara, weaker solutions are in place. If a fifty-per-cent. solution be employed, the application should not be repeated until the end of sixteen to twenty days. For cauterization, Snger employs a long, thin, silver sound.

#### DIAGNOSIS AND TREATMENT OF PROSTATIC ENLARGEMENT.

BELFIELD (*Indian Medical Journal*, August, 1894), in the following sentences, expresses his views on this subject :

While the etiology of prostatic enlargement still remains a matter of speculation, it is certain that the earliest clinical symptoms are due to vascular engorgement of the prostate and, by consequence, of the bladder. The actual increase in the size of the gland should not obscure the other factors in producing the symptoms, which may be out of all proportion to the perceptible enlargement. The factors contributing to the familiar symptoms associated with prostatic enlargement are :

1. Venous congestion and oedema of prostate and bladder.
2. Fibroid thickening of the vesical (prostatic) sphincter, often extending to the detrusor and to the prostate.
3. Suppuration in the prostatic urethra (glands and utricle).
4. Hypertrophy of the prostatic elements (glandular or muscular, or both).
5. Chronic retention of urine, due to any one or all of these four antecedent conditions.

The most important as well as the most difficult task in diagnosis is the differentiation among these various morbid states ; for the prognosis as well as the treatment is determined by the predominance of one or another of them. For example, a prostatic patient complains of frequent and painful urination ; the chief trouble may be an aggravation of the usual venous congestion, in which case a brisk laxative, suppositories of ichthyol, and ergotin and strychnine internally will secure speedy relief. Again, the symptoms may be due to prostatic suppuration, in which event irrigation of the deep urethra with hot water containing hydrastin or silver nitrate is needed ; or the frequent urination may be simply the overflow of a distended bladder, which is relieved by the cautious daily use of a clean catheter.

It should be remembered that the symptoms clinically associated with prostatic hypertrophy depend upon several distinct morbid conditions, of which the mechanical impediment to the exit of urine may be the least ; and that no

routine treatment can be prescribed, the requirements varying with the case.

Our resources for meeting the needs of different patients may be thus summarized :

1. *Medical*.—(a) Improvement in the blood circulation through prostate and bladder is favored by proper diet and exercise, avoidance of constipation, massage of prostate between a sound in the bladder and finger in rectum, and by the daily use of a clean catheter ; internally, ergotin and strychnine are certainly useful.

(b) Suppuration in the bladder neck requires irrigation of the prostatic urethra with hot water, solutions of hydrastin, silver nitrate, etc., in addition to the measures already mentioned.

(c) Induration and distortion of the bladder neck may be improved by dilatation with large sounds or a special dilator.

In a certain percentage of cases the time arrives, sooner or later, when these measures fail to relieve, and more efficient and immediate aid must be rendered.

2. *Surgical Methods*.—(a) The simplest is puncture of the membranous urethra from the perineum and introduction of a drain, which is permitted to remain for a couple of weeks. The subsidence of congestion and oedema, and the cleansing of the bladder thus induced, sometimes makes an apparent cure for many months. Puncture with a trocar through the prostate (Harrison), or drainage of the bas-fond behind the organ, is even more desirable.

(b) By a perineal urethrotomy the surgeon can secure not merely drainage, but also thorough digital stretching of the prostate and the incision or excision of obstructions at the orifice of the bladder.

(c) More satisfactory excision of prostatic obstructions has been accomplished by a combination of suprapubic cystotomy with perineal urethrotomy,—now a standard operation.

Within the past year there have been reported attempts to relieve the sufferings of the prostatic by securing atrophy of the enlarged prostate ; by Bier, through ligation of the internal iliacs, and by Raum,\* through castration. Bier reports three cases ; in one, death from septic peritonitis occurred ; in the remaining two, marked reduction in the size of the gland and decided improvement in symptoms

\* The credit of proposing castration as a means of producing prostatic atrophy undoubtedly belongs to Dr. J. William White, though Raum was probably the first to make a practical application of the proposal on man.—ED.

are reported. Castration alone is said to have accomplished a cure in Raum's two cases.

Two new operations upon the enlarged prostate itself have been recorded; one by Nicoll, who made a submucous removal of the entire prostate from the perineum in two cases with good result; the other, by Belfield, combines the removal of any part or all of the prostate with perfect drainage of the bladder and deep urethra. By incision into the ischio-rectal fossa, the prostate and trigone are laid bare and incised in the median line; each half of the prostate can be enucleated to any desired extent. A suprapubic incision—robbed of its danger by the perfect drainage secured through the posterior wound—can be made, if required for freedom of manipulation. This operation seems to meet all the indications of all cases. Like most other operative procedures, it is undoubtedly too severe for feeble patients to endure.

#### ABSCESS OF THE APPENDIX.

During a recent clinic MCBURNEY (*International Journal of Surgery*, September, 1894) presented a case of more than usual interest and one rarely met with. Three weeks prior to admission the patient had been in good health, when she was seized with a pain in the right iliac fossa, together with nausea and vomiting. The pain continued to increase in severity up to the time she entered the hospital, ten days before. She had a temperature of 101° F., pulse rather feeble, abdomen slightly tender on pressure, but with the walls relaxed. On palpation, a tumor in the right iliac fossa could be readily felt, which was not adherent to its walls, nearly spherical in shape and nodular in character. The history of the case was not of much aid in arriving at a diagnosis. There was no reason to believe that the tubes and ovaries were affected, and although the tumor was situated very near the pelvis, it did not extend into that cavity. There was no distention or obstruction, such as would be caused by a tumor in or around the intestine, thus pointing to the origin of the tumor as an abscess of the appendix.

As the patient was not suffering from high fever, nausea, or distention, the trouble being entirely localized, operation was postponed. The next day the tumor had entirely disappeared, and, unfortunately, no attention had been paid to the character of stools, which might have afforded an explanation of this occurrence. There is no doubt that she had an abscess of the appendix, which evacuated itself into the intestine through a new passage. The

patient was in a more comfortable condition and the pain entirely allayed. Close examination of the abdomen revealed an induration of the tissues at the site of the original tumor. The patient continued to have fever, though somewhat reduced in intensity since that time. Her condition remained about the same. Slight abdominal tenderness, but no distention, was present, and the bowels were active. In cases of this kind, where the abscess has burst into the intestine, some patients have continued in good health and been entirely cured. On the other hand, cases with this history sometimes suffer from repeated recurrences, until an operation has been done for their final cure. In such cases, on cutting down, the reporter has found the appendix entirely separated and lying quite loose in the mass of connective tissue forming the wall of the abscess, the opening in the gut still existing.

Therefore, McBurney advised operation in the above case. He calls attention to the fact that cases of appendicitis differ very greatly in character. Incisions made through the abdominal wall must be adapted to the requirements of each case. In some cases the appendix can be removed with perfect ease through a very small incision, say one and a half inches in length, but to apply such a method, as recently described in some of the journals, indiscriminately to the different cases, and to adopt a standard incision for abdominal section, is useless. The incision must be adapted to the character of the case to be operated on; we should not accept any method of entering the peritoneal cavity through a small opening in operating for an extensive disease. If we know by experience that the disease is small in extent, then we can remove the appendix through a small aperture with advantage. This, of course, does not apply to the cutaneous incision.

The operator, after cutting down to the appendix, found an abscess cavity. The appendix was removed and the opening in the intestine sewed up. The patient was in such a condition that the removal of the diseased appendix seemed the only course to prevent an imminent attack of appendicitis.

#### CÆLIOTOMY IN TYPHOID PERFORATION.

A case of operation of this nature is reported in the *British Medical Journal*, No. 1783. The patient was in the fourth week of the typhoid fever. Symptoms of perforation developed, attended by collapse. The abdomen was opened as soon as the patient reacted. Perforation was

The bismuth is added to prevent irritation of the mucous membrane of the rectum.—*Medical and Surgical Journal*, August 4, 1894.

#### VOMITING OF PREGNANCY.

A writer in the *Lancet* says, "I have not failed once for many years, by a single vesication over the fourth and fifth dorsal vertebræ, to put an end at once to the sickness of pregnancy for the whole remaining period of gestation, no matter at what stage I was consulted. The neuralgic toothache and pruritus pudendi of the puerperal condition yielded as readily, and to one application."—*Medical and Surgical Journal*, August 4, 1894.

#### IVY-POISONING.

A current number of the *Sanitarian* advises the application of Labarraque's (solution of chlorinated sodium) solution in this irritating affection. It should be applied in full strength by means of a pledget of lint or diaper cloth kept constantly wet with the liquid; it will afford relief immediately.

#### SEPTIC OSTEITIS IN CHILDHOOD.

A lecture on this subject was recently delivered by Mr. EDMUND OWEN at the London Hospital for Sick Children, and is reported in the *Lancet* for May 26. Mr. Owen believes that a diagnosis of rheumatism is sometimes erroneously made, when the condition present is, in fact, osteitis due to some septic infection. This may occur without a history of local injury, but usually some illness has seriously disturbed the patient's nutrition. In such circumstances all the tissues of the body are rendered uncommonly susceptible to infection, and it is not strange that the delicate new bone at the end of the diaphysis should suffer. Any septic micro-organisms which have gained entrance into the body might readily implant themselves in this region of slight resistance. Here they would undergo prolific cultivation, secreting their ptomaines to poison the blood and disturb the nervous system. Two cases were presented illustrating this condition. In neither case could a satisfactory cause be discovered. Sometimes the disease is acute and fulminating, and carries the child off before a diagnosis has fairly been made. In others, as in the cases mentioned, it is slow, and simulates articular rheumatism in many respects. Unlike rheumatism, however, the heat, the swelling, the pain,

and the tenderness, although close to the articular area, do not involve it. The tenderness is limited to the region of the bone close below the junction cartilage, and at this point there is a definite thickening. In articular rheumatism the swelling, the fulness, and the redness are confined to the area of the synovial membrane, and there is no thickening about the bone; the results of treatment also aid in diagnosis. The relief of the symptoms of acute rheumatism is, as a rule, so prompt under the use of salicylic acid that an increase in the severity of the articular signs, or even a lack of any improvement after a few days, should arouse suspicion and call for a more thorough and careful investigation. The diagnosis should be made as promptly as possible, for error and delay lead to lamentable results. The treatment is essentially surgical. Incision should not be delayed until the presence of pus is demonstrated. Delay allows the septic inflammation to make irremediable havoc, so that the sooner the area of disease is attacked and cleared out the better. To wait for fluctuation is to give the staphylococci and other micro-organisms full opportunity to do their worst. The incision should be through the periosteum, and, if any pus is here confined, a free opening should be made. The diaphysis should be trephined to give free exit to all septic matter pent up within the bone.—*New York Medical Journal*, August 4, 1894.

#### SPLENECTOMY.

CONKLIN (*Medical Record*, July 28, 1894) reports a successful splenectomy. The patient, Mrs. A., American, aged twenty-nine, married, multipara, was admitted into St. Elizabeth Hospital, May 29, 1893. Her family record is without taint, menstruation normal, and general health but little impaired. Mrs. A.'s early life was passed in a highly malarious district in Southern Illinois, and up to her marriage and removal to Ohio she was subject to frequent attacks of chills and fever, and carried almost constantly an "ague cake" in her side. She had been free from malaria for several years, and, aside from an attack of typhoid fever, has had no serious acute illness. Two years before she began to have abdominal and pelvic pains, and some months later discovered a lump low in the abdomen. Examination disclosed a solid, freely movable tumor, sensitive to touch, in the left iliac region, dipping into the pelvis, but not connected with the uterus, and a small cyst of the right ovary. The uterus was normal in size, but retroverted.

Dr. Jewitt made a coeliotomy June 10, 1893. The solid tumor proved to be a displaced spleen about twice the normal size. It was free from adhesions and easily replaced. The right ovary, containing a cyst the size of a small orange, was removed; left ovary normal; convalescence was uneventful. She was soon discharged, with positive instructions to wear constantly a properly fitting abdominal supporter, with the hope of retaining the spleen in position.

Mrs. A. was readmitted into the hospital during the author's service, September 23, 1893. Shortly after her return home she again began to suffer from pelvic symptoms, and for the past two months had nearly continuous abdominal soreness and several severe paroxysms of pain, which drove her to bed. Her abdomen had been steadily enlarging.

Six days ago, while doing the family washing, she was seized with agonizing pain in the abdomen, which required for its control the administration of morphine. Vomiting of large quantities of bile-colored fluid began on the following morning, and still recurred. In spite of treatment, the bowels refused to move for more than a week; temperature normal.

On examination, the abdomen was found tympanitic, very sensitive to pressure, and occupied by an immovable, solid tumor, which completely filled the left side from the pelvis to the ribs and extended considerably beyond the middle line; it could easily be touched per vaginam.

The former operation greatly simplified the diagnosis, and left no doubt that the tumor was the enlarged and inflamed spleen. The acute symptoms were attributed to intestinal obstruction, due either to pressure from the spleen or to adhesions at the seat of the ovarian stump. The symptoms grew steadily worse until forty-eight hours after admission, when the bowels responded freely to treatment, after which the vomiting ceased and her general condition improved. The respite was of short duration. The local tenderness, paroxysmal pains, and vomiting returned, accompanied by fever. The temperature ranged from 99° to 101° F. for ten days, and measured 100° F. on the morning of the operation. Peritonitis had evidently supervened, and at a consultation of the hospital staff it was decided that the removal of the offending spleen offered the only chance of recovery.

The operation was performed October 7. The parietal incision, seven and a half inches in length, was made along the outer border of the left rectus. On exploring the spleen, contrary to expectations based on the revelations

of the previous operation, it was found adherent to the abdominal wall, omentum, and intestines. The intestinal adhesions especially were firm and extensive, involving the entire under and inner surfaces of the tumor. Their separation consumed much time, the capsule of the spleen being torn in several places. The peritoneum gave unmistakable evidences of active inflammation. The pedicle was long, twisted through three complete turns, and, with its engorged and tortuous vessels, resembled a huge umbilical cord. It was transfixed, firmly tied with heavy twisted silk, using the Staffordshire knot, and for greater security encircled with another turn of the ligature. The ligature was cut short and the pedicle dropped, a glass drainage-tube placed, and the wound, on account of the patient's condition, hastily closed.

The hemorrhage was slight and easily controlled. The shock was profound and wholly out of proportion to the blood lost or the length of the operation. Hypodermic injections of brandy and strychnine were freely used. Apart from the shock, which threatened to prove fatal for hours after removal to bed, and the temperature, which for twelve days measured from 99° to 101° F., precisely as it had before the operation, there was nothing worthy of special comment during convalescence. At no time was there swelling of the parotid or lymphatic glands. The spleen, drained of its blood, weighed four and a quarter pounds and measured ten inches in length by five and a half in breadth. It was firmer in texture and darker in color than the normal gland. Microscopical examination showed thickening of the trabecular and intercellular connective tissue and pigment in the vessel walls. By an oversight, no microscopical examination of the patient's blood was made before or soon after the operation; at present the proportion of the red and white corpuscles is normal. Seven months after the extirpation, Mrs. A. has grown very fleshy, and reports excellent health, save an overpowering drowsiness.

After a summarizing of the literature on the subject, Zenner concludes that the present position of splenectomy may be briefly epitomized as follows: It is unjustifiable in leucocythæmia or other conditions in which there is extensive involvement of the lymphatic glands or a notable increase in the white blood-corpuscles.

It is indicated in tumors, simple hypertrophies, and other splenic enlargements which have proved rebellious to simple measures and are attended with danger or serious disability.

In movable or displaced spleens requiring

least once daily. The nurse should wear a cotton gown, and a cap that completely covers her hair, whether it ornaments her head or not. The discharges from the affected membranes should be received into sanitary cuspidors or old cloths that should be immediately burnt up. In the use of any application directed to the throat, the nurse should stand at one side, or screen herself behind a piece of glass, as do laryngologists in treating a syphilitic throat. She should disinfect her hands after each contact with the patient. The air of the room should be kept moist by steam, so that the secretions cannot dry and, becoming pulverized, float in the air of the room.

Except in epidemics or in hospital practice, the careful physician will not need the protection of gown and hood, as sometimes recommended. In poor practice where proper care cannot be had, he cannot take too great precaution, and should protect himself and his family and his general clientage by every means known to art. He should disinfect all exposed parts of his body, including hair and beard, by thorough washing with sublimate solution, and should not enter any unaffected house before making a complete change of clothing. After the disease is over, or the absence of the Klebs-Loeffler bacillus has been demonstrated by cultures, the patient should be thoroughly disinfected and returned to the family.

For general prophylaxis, all children with a sore throat of any description should be excluded from school and from our houses until they can bring a clean bill of health from a physician of recognized ability. Kissing on the lips should not be allowed, as is so common among children and women. The use of public drinking-vessels should be prohibited. The proper treatment of nasal and pharyngeal catarrhs is an important matter. It is a possibility to inaugurate and keep up an efficient cleansing of the mucous membranes of nose and throat that is so nearly pleasant that a child with a catarrhal inheritance will submit to its daily use as gracefully as he does to the universally employed tooth-wash.

Recognizing the tonsils, including Luschka's, as vestigial structures, which in man subserve no useful purpose, and that an enlarged tonsil is always a source of danger, I unhesitatingly advise their prompt removal in all cases where they are diseased or project into the fauces.

The local treatment has for its objects the destruction or limitation of the growth of the specific pathogenic bacilli and the frequent removal of the poisonous ptomaines produced in process of their rapid development.

This is accomplished by the frequent irrigation of the affected mucous membranes with solutions of agents that are germicidal, but not irritating and not poisonous to the patient, and by the destruction of the pseudo-membrane by digestive substances. In the application of these remedies, it is unanimously conceded by American physicians that any method that forcibly removes the membranes and does damage to the inflamed tissues is to be condemned as worse than useless; for, however active the agent used on the swab may be, the possibility of ptomaine absorption from the denuded and lacerated submucous tissues is so greatly increased as to more than overbalance any benefit that could accrue. Any method of the employment of an antiseptic agent that necessitates a hand-to-hand combat with the child is also to be most heavily condemned, because of the excessive strain thus thrown upon an already weakened heart. More than one child in the last stages of diphtheria has suddenly died in the midst of a struggle with its nurse, and *because* of such struggle. By the aid of a nasal syringe or a good atomizer and an effective remedy that is not disgustingly nauseating, such scenes can be avoided and a large number of patients saved. Personally, I do not consider the choice of a *particular* germicide of the first importance, but hold that a most effective local treatment can be carried out with any of the popular remedies, *provided* the irrigation is thorough and frequent. I much prefer half-hourly irrigation with a solution of boric acid in rose-water, that is accomplished without struggle and with regularity, than less frequent use of remedies more irritating, if not more effective.

Of the substances more recently come into prominence in the local treatment of diphtheria, peroxide of hydrogen stands first. It is a clear, transparent fluid without odor, and has the chemical formula of  $H_2O_2$ . Pure, it is a most violent escharotic, owing to the fact that in the presence of organic matter it is capable of liberating four hundred and seventy-five times its own volume of oxygen. The preparations ordinarily used are the ten- or fifteen-volume solutions,—*i.e.*, solutions capable of liberating ten or fifteen times their own volume of oxygen. There is no question but that it is capable of oxidizing pus and of killing the Klebs-Loeffler bacillus. It has one great disadvantage. In order to hold the extra molecule of oxygen in combination, all makers have been compelled to use nitric acid in the solution. This acidity is manifest in every specimen which I have examined. It is a variable quantity, but suffi-

ciently marked in every specimen to impart to it irritating qualities, not due to the strength of the solution, which, independently of the diphtheritic process, is sufficient, if persistently and frequently used for a day, to cause a thin pseudo-membranous deposit over the mucous surfaces with which it is brought in contact. Dr. Squibb has demonstrated that if this acidity be neutralized, at the moment of its use, by the addition of a little of a ten-per-cent. solution of soda, the efficacy of the peroxide is not diminished, and it can then be used with perfect freedom. This irritating quality of the commercial peroxide of hydrogen has been productive of so much harm that many physicians, including Jacobi, have inveighed against it. I am told that the product sold by a French firm is neutral to test-papers, and should not, therefore, be so injurious; but I cannot speak from personal knowledge. In "pyrozone," a liquid with a trade-mark attachment, the manufacturers claim to have a peroxide of hydrogen made without pressure and without acid, essentially permanent under ordinary conditions. It is sold in ground-glass-stoppered bottles, in three-per cent. solution, for internal use, or in sealed glass tubes, five per cent. or twenty-five per cent., for surgical purposes. The three-per-cent. solution is not neutral, and is quite irritating to my own throat. In using peroxide of hydrogen it is observed that rapid oxidation of the pseudo-membranes and the accompanying secretion takes place, which is indicated by the accumulation of bubbles of gas, and the expectorations are foamy. After an application nearly an hour must elapse before the improved condition can be clearly seen. If the membrane be thin, the fifteen-volume solution can be diluted with ten times its bulk of water, and the solution applied by means of an atomizer; or it can be diluted with fifteen volumes of water and introduced through the nose by a syringe. If the membrane in the fauces is dense, a glass syringe is used and the fine point made to penetrate the membrane, and a few drops of a strong solution is introduced under the membrane. The repetition of this every second hour results in the disintegration of the membrane in a short time.

Carbolic acid in one-per-cent. solution, alone or combined with alkalies and borax, has long been a favorite, and of its usefulness there is little question.

The bichloride of mercury with citric acid, in 1 to 1000 or 1 to 2000 solution, is effective, not disagreeable, and (if not used in concentrated solution) not irritating, and it is not toxic except in those especially susceptible to the

action of mercury. The same can be said of the biniodide of mercury in solution of proper strength, say 1 to 10,000, or even 1 to 20,000. Where children are old enough to gargle and intelligent enough to eject the solution, there is no more effective medication than that afforded by corrosive sublimate or by carbolic acid. In very young children neither should be used, because of the danger from systemic poisoning. At the earnest solicitation of a patient for whom I had prescribed a gargle of permanganate of potassium, I made a personal trial of the solution. I have never prescribed it since, and I am glad to know that it is no longer mentioned as a remedy of power in the treatment of this or any other throat-disease.

Salicylic acid in various solutions has been used, but it offers no superiority to other substances more agreeable.

Boric acid in saturated solution, fifteen grains to the ounce, is capable of greatly modifying the development of the specific bacilli, though it is not so quickly destructive of their energy. Its freedom from odor, from taste, and from colors makes it a favorite remedy with very many physicians. It is so little irritating that it can be used freely through the nose as well as the fauces, and because of this property is especially adapted for use by those who believe in the frequent flooding of the mucous membranes of the nose and fauces as a matter of routine practice. I am quite sure that I have seen far better results by this method of procedure,—injecting a drachm of a four-per-cent. solution of boric acid in rose-water through each nostril every half-hour, day and night,—with the peaceful co-operation of the patient, than I have from the use of other solutions, more powerful but more disagreeable, forced upon an unwilling child.

The vegetable acids—acetic, citric, and malic—are of undoubted service in the treatment of diphtheria. The pineapple contains much malic acid and a peculiar substance claimed to have solvent power on fibrin. However that may be, the use of pineapple syrup or of lemon-juice and sugar, as a vehicle for the medicine to be given internally, will be appreciated by every child, and the selection of Rhine wine as a favorite alcoholic will permit of the addition of vegetable acids as allies in our treatment which are not to be neglected.

Within a comparatively recent period the use of digestive ferments to destroy the diphtheritic membrane has been extensively practised. This use is scientific. The digestion of the membranes does not cure the diphtheria, but it exposes the germs to the action of whatever germicide may be immediately afterwards

used, and, equally important, makes it possible to wash away their deadly product before it becomes absorbed. Pepsin was early used, but because it was less active in alkaline fluids, it was supplanted by trypsin, which, again, has the disadvantage of being active only in an alkaline medium. Either can be used in concentrated solutions or as a glycerole, or the powder can be blown directly upon the membrane. Better than either pepsin or trypsin, because it is equally active in alkaline and acid media, and because its action is augmented rather than destroyed by the ordinary solutions of the various germicides, is the vegetable pepsin extracted from the melon-like fruit of the paw-paw tree. A friend tells me that in Florida, where the native beef is the toughest ever known to man, the Crackers have learned that the meat can be made tender by wrapping it in the leaves of the paw-paw, and the most refractory specimen yields to a night's action of the cut slices of this marvellous melon. I have often demonstrated its solvent powers upon fibrins, and have made use of it in solution with an atomizer, but quickly discovered that a watery solution underwent decomposition very rapidly, and inside of a very few hours developed an odor that rivalled that of some of the so-called pure pepsins. Accordingly I began using it as a powder, blowing it upon the affected surfaces, or sometimes as a thick paste, carefully painting it over the fauces. By recent investigations by Professor Chittenden, M.D., of Yale, it has been definitely established that a solution of papoid can be made permanent by the addition of boric acid or salicylic acid or bichloride of mercury, and that these substances, instead of interfering with the activity of papoid, actually increase its solvent powers, so that an application can be made that is at once solvent and germicidal.

If the diphtheria becomes laryngeal, local medication must then be carried out by means of medicated steam or by volatilized or sublimed drugs. Indeed, it has become habitual with me in every case of diphtheria, except of a very light grade, to order water evaporated in a shallow vessel over an alcohol or oil lamp, so that the air of the room shall be constantly charged with moisture, and to direct that into the water, from time to time, shall be put a tablespoonful of a mixture containing half an ounce each of pure carbolic acid or wood creosote and oil of eucalyptus and six ounces of spirits of turpentine. It seems to me reasonable to think that an atmosphere charged with these volatilized drugs, which are known to be valuable antiseptics and stimulants to the respiratory

mucous membrane, should prevent the invasion of the larynx and trachea. It is in evidence that in cases where it has been early and persistently used complete obstruction has not occurred, and in cases of great malignancy and rapidity, where tracheotomy was early necessary, the constant use of this steam and the occasional spray of lime-water increased the percentage of recoveries. Lime-water is chemically a solvent of the pseudo-membrane; it is also possessed of marked antiseptic properties; it is astringent and very soothing to an irritated mucous membrane. Sprays of finely atomized warm lime-water should be frequently, almost constantly, employed in diphtheritic croup. It does not answer to slake lime for the accomplishment of this purpose, though in an emergency the slaking of stone lime gives large volumes of steam, which of itself is a gain. But steam can be generated so easily by dipping heated irons into water, or by rigging up a steam generator that can communicate with a tent-covered bed, that the crude method of obtaining that result with slaking lime is rarely resorted to.

The sublimation of calomel is highly recommended in laryngeal diphtheria. In a recent discussion to which I had the pleasure of listening, Dr. J. Lewis Smith said that this method had cured cases of laryngeal croup in which it seemed that an operation must be necessary, and he further asserted that O'Dwyer and others of wide experience say that in cases where operations have been necessary, the recovery has been more prompt and more satisfactory under the influence of this drug. The sublimation is accomplished by placing on a tin plate over an alcohol lamp fifteen grains of calomel, and confining the dense white fumes resulting inside of a tent. It is asserted that no case of systemic poisoning has occurred in a patient, though nurse and physician have sometimes become salivated. I have used a modification of this method, and have observed that while the fumes were very irritating to the attendants, the patient was unaffected, and indeed apparently enjoyed the procedure.

To summarize the local treatment that to-day seems the most effective, we would include the early and constant use of steam medicated with the turpentine mixture; the cleansing of the fauces with a solution of papoid, followed by frequent irrigations day and night with bichloride solution or boric acid or Dobell's solution, properly administered through a blunt-pointed nasal syringe; the sublimation of calomel as soon as the larynx shows evidence of invasion the choice of vehicles containing fruit acids in



the administration of medicine, and of a sour wine as an alcoholic. We have no specific for diphtheria.

The indications for the constitutional treatment are three,—*to support the system, to antagonize the ptomaines, and to support the heart.* For the fulfilment of the first indication food is of the first importance, and any medical treatment that interferes with the ability to take and assimilate a full allowance of nutriment is worse than useless. The food should be easy to digest, bland, and for the most part fluid in form; and for this purpose milk and beef-juice answer admirably, though other suitable things may be allowed, like oysters, fresh eggs, oatmeal gruel, and the various invalid foods, especially those partly digested. It should be given every three hours, day and night.

The experience of the past has taught us that in the tincture of the chloride of iron we have a remedy of absolute value, and that the combination with it of chlorate of potassium in small doses enhances its value and does not endanger the kidneys. A mixture containing these agencies in a fruit syrup, like pineapple syrup, is readily taken, and to be effective must be frequently given and in such doses as the general condition of the patient makes necessary. The chlorate of potassium has no specific effect upon the diphtheritic process, but it stimulates the non-infected membrane to healthful activity, and aids materially in preventing the spread of the disease.

The bichloride of mercury in small doses frequently given has been used sufficiently long to have gained a place in the list of effective remedies. It is my practice to give  $\frac{1}{100}$  grain of bichloride of mercury, sufficiently diluted, every half-hour, day and night, and I have yet to see any but beneficial effects from this employment of the drug. It supports the system, stimulates the appetite, and prevents fermentation of food, and has some antiseptic action locally as it is swallowed.

Small doses of quinine are sometimes of use, but, in my experience, the early and persistent use of therapeutic doses of strychnine sulphate or nitrate accomplishes much more; for, while it is a stomachic and stimulates digestion, it is the best possible stimulant to cardiac and respiratory centres, and antagonizes the baneful effects of the ptomaines upon the nervous system as but one other drug in the *materia medica* does.

The use of alcohol is indicated in nearly every case. Under the influence of the ptomaines, it is astonishing what quantities of

alcohol can be exhibited without producing characteristic effects. I hold with those who believe it demonstrated that alcohol, in cases of systemic poisoning, whether from snake-bites or ptomaine saturation, supports the system and antagonizes the alkaloidal poisons more efficiently than any other remedy we have. It should be given early, and unless there be some indications for some other form, the choice should be an old, sound Rhine wine. If the acid of this wine fails to agree with the stomach, a pure whiskey diluted with water should be selected. The dose depends only upon the necessities of the case; and yet it should not be forgotten that it is possible, even in diphtheria, to produce acute alcoholic effects.

If, with these drugs properly administered, the heart shows signs of failure, resort must be had to musk and digitalis. In cases of systemic poisoning, as in typhoid fever or in diphtheria, musk has seemed to me to be more effective than digitalis or any other cardiac stimulant. Indeed, I have come to feel that if musk fails to stimulate the heart where an arrest of the circulation impends in this class of cases, medical art is of no more avail.

The use of pilocarpine has been advocated by eminent authority, but fears of its depressing effects upon the heart seem so well founded that it will be well to wait for others to prove its safety before we advocate its use.

The list of possible remedies is very long, its very length being a proof that we have no specific as yet against a disease that takes more lives annually than does the much-dreaded yellow fever or the cholera.

If time shall prove that in the recent discoveries in the bacteriological laboratories of Berlin a specific has at last been discovered that will not only render our children immune from this disease, if given as a prophylactic, but also cure them safely and quickly when attacked by this dreaded destroyer of life, we can look into the faces of our little ones with a feeling of safety that we do not now know.

Since the preparation of the above, Professor Loeffler's paper on "The Local Treatment of Pharyngeal Diphtheria," read at the last International Medical Congress, has been published in the *Deutsche Medicinische Wochenschrift* for October, 1894.

Recognizing the great advance made in the therapeutics of diphtheria by the discovery of antitoxin, he is still loath to forego the local use of disinfectants for the following reasons: first, because in a very long series of cases the local use of the remedy he has evolved from bacteriologi-

cal and clinical studies has proved of astonishingly great value; secondly, because true diphtheria is so often associated with other complicating pathological processes, the result of pus-producing cocci, none of which are favorably affected by antitoxin, but all of which are destroyed by his remedy; and, thirdly, because the remedy is inexpensive and always at hand.

Briefly stated, the remedy he has arrived at from years of bacteriological and clinical investigations is a combination of disinfectants stronger than any of its components, not at all injurious to the individual, though killing the Klebs-Loeffler bacillus,—the pseudo-bacillus and streptococci in five seconds, and the staphylococci in forty seconds *in situ* in the membranes and the secretions. It produces a sensation of burning, which passes off in a few minutes, and it is not disagreeable in taste or odor.

For the purpose of diminishing the disagreeable sensation at the seat of application, menthol has been added, and the completed formula is as follows:

R Menthol, 10.9 c.c.m.;  
Solve in toluol, 36 c.c.m.;  
Alcohol, absolute, ad 60 c.c.m.;  
Liquor ferri sesquichlorat., 4 c.c.m. M.

Put in a brown glass bottle with a glass stopper.

The solution keeps for months without losing any of its efficacy; its application is simple. The diseased area is to be cleansed of mucus by wiping it with a pledget of absorbent cotton, and then a second pledget saturated with the solution is to be held against the spot for five to ten seconds. The application is to be repeated every three hours in the beginning, and less and less frequently as improvement is noted; and, finally, but once a day, to prevent the redevelopment of the disease from bacilli that may have been deeply lodged in the crypts of an irregular tonsil.

The results obtained in cases seen on the first day of the appearance of the disease have been uniformly and rapidly curative. There has been no extension of the process downward into the larynx or forward into the nose, and convalescence has not been attended by any of the paralyzes.

In cases seen later the results compare favorably with those attained by the use of antitoxin at a similar period.

The effect is shown by a return of the temperature to the normal in from twenty-four to forty-eight hours, and a decrease in the frequency of the pulse, which, however, does not return to the normal standard until about two days after the temperature becomes normal.

The improvement in the general condition is rapid and very marked. The membrane soon becomes changed in consistence, softening and shedding in large flakes in a comparatively short time.

In severe cases the mixture containing the iron solution is always to be chosen, but in cases where the patient is so sensitive as to be unable to bear the transitory smarting of the application, and in cases accompanied by putrefactive processes where the iron becomes changed into the sulphide, discoloring the pharynx and the tongue, and in all of the pseudo-diphtheritic diseases, he recommends that for the iron solution there be substituted two cubic centimetres of meta-cresol or two cubic centimetres of creolin, and the alcohol be increased by the same amount, and asserts that the efficacy of the solution is but little impaired, though it does not exert its influence so deeply.

Since reading this paper I have had but one opportunity to test the remedy. In this case the results tallied exactly with those detailed above.

448 SOUTH SALINA STREET,  
November 13, 1894.

#### A PLEA FOR VENESECTION.

READ BEFORE THE GLOUCESTER COUNTY MEDICAL SOCIETY AT  
A MEETING HELD AT CAPE MAY, N. J., ON JULY 6, 1894.  
PUBLISHED BY REQUEST OF THE SOCIETY.

BY GEORGE C. LAWS, PH.D., M.D., OF PAULSBORO, N. J.

IT is difficult to assign to any one cause the almost entire disuse of venesection. In the early part of this century it was the remedy, and was used indiscriminately. During the great epidemic of typhus fever that prevailed from 1812 to 1820, and for some time after, it was found that the epidemic had impressed some of its characteristics on all diseases, and that depletion was not well borne. The advent of homœopathy, "that remarkable system of doing nothing," demonstrated that it was possible for patients to recover without any medical treatment, except nursing and diet. About this time a reform was originated within the ranks of the profession against the indiscriminate use of cupping, bleeding, and leeching by barbers, unqualified persons, and the laity themselves, as well as in regular practice.

The influence of novelists and writers of from twenty-five to fifty years ago is not to be discounted. From the homœopathic era to the present time it has been the fashion to make sport of medical science and regular practitioners. Thus, among those most widely

read, Lord Lytton, in one of his stories, makes a reformed medical character regret the time when he practised manslaughter; Wilkie Collins demonstrates the superiority of a warm bath over medical treatment in recovering a man from apoplexy; Charles Reade, in almost all of his stories, has for a character the medical crank who sneers at regular practice, cures without medicine, and is vindictively strong against bleeding; George Eliot, in "Middlemarch," demonstrates the beauty of the "expectant treatment of pneumonia by diurnal applications of the clinical thermometer;" the story of the treatment of General Washington in his last sickness has been told over and over again; Dr. Sangrado, in "Gil Blas," with his bloodletting and warm-water diet, has been referred to as though he were a standard medical authority. These will serve as a few examples of the tone of the secular press. Even at the college, when I was a student, it was not unusual for some of the professors to give a sly dig at the practice.

The opposition to bleeding as a remedy came largely from without; what was intended as a reform of abuses within the profession became an almost total abandonment of one of the most powerful and beneficial therapeutic agents at our command. As a routine practice it may have been overdone at times, but its abandonment was uncalled for, and has cost thousands of valuable lives annually.

From reading many of the medical and other publications of a few years ago, we would imbibe the opinion that the people of the last century were habitually bled to the verge of death, and the human race must, in consequence, have been feeble and exsanguineous. The portraits of our grandparents and earlier ancestors show a different state of affairs. Portraits of the Revolutionary worthies in Independence Hall show a remarkably healthy and vigorous set of men; they do not look as though they suffered from organic weaknesses of any kind, or were troubled much with anæmia.

My medical experience began twenty-five years ago; at that time a reaction seemed to be setting in against the antivenesection fad. Professor Stillé advocated its use in his lectures as a powerful therapeutic agent, even recommending it in the early stages of typhoid fever; at the same time I think his list of contraindications had the effect of frightening his pupils; Professor Gross, of the Jefferson College, was also an able advocate of its utility. Dr. Hiram Corson, that thorough, all-around practitioner and typical country doctor,

also urged by tongue and pen the importance of common-sense methods, bleeding included, in treating disease.

Dr. George B. Wood, the author of the "United States Dispensary" and Wood's "Practice," was a firm believer in practical therapeutics, and urged the value of bleeding in inflammation and congestion. While this was the teaching of the time, yet the practical fact remains that from the time I entered the college until my fifth year of practice I was a strong antivenesectionist, and I have a suspicion that other practitioners were for the same reason,—viz., I had never seen a patient bled, and did not know how, except theoretically. I could have performed an amputation with a great deal more confidence. In these early days I encountered some cases of pneumonia and pulmonary congestion, as well as other congestive and inflammatory conditions; the supporting treatment was then in vogue; the human race was considered to be in a weak and tottering condition, requiring nourishing and stimulation when sick. A few cases of accidental hemorrhage occurring with beneficial results led me to a radical change in mode of treatment. My experience with pneumonia, apoplexy, and congestive and inflammatory conditions had not been entirely satisfactory. While most of the cases pulled through, still, there seemed in pneumonia to be impairment of lung-tissue; one or two slipped off easily into a typhoid condition instead of getting well, and a couple of cases that I thought were pneumonia in the outset might as well have been cases of acute phthisis for the deadly certainty with which their lung-tissue softened down.

My experience with a few cases may prove interesting; I select a few from a comparatively large number. These ones I took record of at the time. Almost my first patient from the dispensary was a case of pneumonia. He died promptly before I got in a second visit.

*December 20, 1876.*—W. M., aged forty-eight, farmer, after a drive from the city in a cold rain, was taken with a chill, fever, and all the symptoms of pneumonia of lower lobe of right lung. A laxative of rhubarb and calomel, followed by veratrum viride and gelsemium and quinine and milk-punch and hot poultices, were the orthodox remedies then. He lived some miles out in the country, and on the night of the 21st we had the bad storm of the season. About midnight he had a severe attack of bleeding from the nose. It was impossible to send for me on account of the storm, and as he felt the better for it, he let it bleed.

He saved the blood to show me in the morning; there was over a quart. There was some slight cough, but no pain, and he was able to take a full, deep inspiration; no pneumonia in sight.

The next case was Mabel J., aged twelve. Decided chill February 11, followed by fever and pain at the base of the right lung. February 12, pulse, 135; temperature, 104° F.; respiration, 28. Sharp, painful cough; expectoration raised with difficulty, rusty and bloody. Treatment, a laxative, followed by Norwood's tincture, 3 drops every hour, hot mush poultices to side, and a quieting cough mixture every two hours. February 13, ditto. February 14, had a sharp chill the night before, followed by additional pain in left side; pulse, 155; temperature, 105.5° F.; respiration, 40; cough and expectoration freer, with plenty of rusty sputa. Child delirious. At 10 A.M. I applied three leeches to base of left lung, checking what I considered superfluous bleeding, after leeches dropped off, with Monsel's salt. The leeches gave relief; reapplied the hot poultices, and continued treatment, with the addition of quinine and milk-punch, and went out into the country to a confinement. On my return home, at 8 P.M., found a message to come at once. Found patient very weak, face and lips as white as the pillow, pulse feeble, 80 per minute; temperature, 98° F.; respiration, 14. Found the poultices and the bedding under the child saturated with blood and the leech-bites each running a small stream. Monsel's salt on cotton and a strip of adhesive plaster stopped the bleeding. Wrapped chest in cotton; milk-punch and beef-tea, and quinine sufficient to prevent a return of chill next evening were required, but I do not remember to have seen anything further of the pneumonia. I invested in a lancet.

Christian W., aged twenty-two, a German, a stout, hearty man, had pneumonia of right lung. A physician from the city had seen and prescribed for him while attending another patient in the house. Had been sick three days when I saw him, and was then in a bad way. Temperature, 104.5° F.; pulse, 150; respiration, 38; rusty sputa. Sharp, painful cough, pain in right side, and dyspnoea. Next night, about midnight, was sent for in a hurry and found him much worse; face and extremities dark and livid; pulse small, feeble, and rapid; breathing rapid; patient semi-unconscious and apparently dying. I tied up his arm and bled him; I bled him until the lividity disappeared from the face and the

duskiness from the skin; till his lips and fingernails changed from black to their natural hue; till his pulse slowed down and increased in volume and strength; till he came out of his coma and could take a long, deep inspiration. Subsequent treatment, digitalis, carbonate of ammonium, milk-punch and quinine, and later on an expectorant mixture of squills, senega, and muriate of ammonium, with  $\frac{1}{16}$  to  $\frac{1}{4}$  grain of morphine in each dose. He was convalescent next day.

*August 25, 1878.*—Mrs. M., aged thirty-five, married; three children, youngest thirteen months old; not a robust woman, but still of fair health. The usual history of pneumonia of right lung. Taken sick Wednesday night with chill and fever, pain in side, dyspnoea, dry, painful cough, and later on rusty sputa. Saw her Thursday. Bled her moderately, about twelve ounces. (Her husband and all his family were strong sugarpaths.) Friday considerable better, apparently convalescing; a very warm night and the nurse raised all the windows; towards morning awakened out of sleep with a sharp chill, followed by fever, pain, and distress in left side and return of symptoms in right lung. I saw her Saturday morning. Temperature, 106° F.; pulse, 140 and weak; respiration, 50; face, neck, and extremities livid; cough sharp and distressing; rusty and bloody sputa. At 9 o'clock A.M. I succeeded in bleeding her about four fluid-ounces, with considerable relief. At ten o'clock I tied up the other arm and bled her all I could get,—about two pints that time. I left her about eleven o'clock feeling easy and comfortable and breathing easily. Pulse, 110° F.; temperature, 102; respiration, 20. At 1 P.M. was sent for again in a hurry; she was having considerable uterine flow, and in about an hour miscarried at the second month, with the usual hemorrhagic accompaniment. From all the loss of blood I never saw any bad results or any especial weakness. Uterine discharge kept up about as usual for a few days. We had no more pneumonia.

I remember another bad case of which I have no record, where I failed to draw blood with the lancet until I had applied wet cups to the chest and so relieved the circulation.

I have had numerous cases of pneumonia since, but have had none as bad as those in my early years of practice. In all cases I believe it is good practice to bleed promptly as soon as the disease is recognized. Even a mild case may become dangerous if the usual pathological changes take place in the lungs. I also believe it is never too late to bleed, if the patient

is alive. The amount of relief that follows the first successful touch of the lancet is so great that it has to be seen to be appreciated. It would be a waste of time for me to discuss the clinical history and pathology of pneumonia; with both you are all familiar, and also have adequate libraries for reference. But from the stand-point of an active practitioner there are a few points I would call your attention to: whenever a man dies, he dies either in the heart, the brain, or the lungs. In pneumonia the cause of death is in all three; there is the congested, engorged, and infiltrated lung substance, the exhausted and overloaded heart and venous system, the parotized and congested brain. The blood, which ought to be the very well-spring of life, has become to all intents and purposes a foreign body. There may be such a being as the pneumonia microbe, but he is just as likely to be a *post hoc* as a *propter hoc*. If ever there was a mechanical disease it is this, and common sense points to the means of relief. Blood can be manufactured by the gallon, if required, for future use; but lung-substance may become permanently impaired in a short time, or become the seat of tuberculosis at a later stage.

The heart may have a thrombus formed, to become the immediate cause of death, or may become permanently crippled and weakened. There is but one safe rule with regard to the amount to be taken, and that is, without reference to quantity, to bleed until there is entire relief, if possible, and it is nearly always possible in the early stages. If, for any cause, bleeding is postponed till later, I think it good practice to not check the flow so long as there is improvement, and to stop at the first intimation of approaching faintness, which may always be told by the slight blanching of the lips. Watch the patient's face and pay no attention to the quantity of blood taken; how much a case of pneumonia has to spare no one will believe, except by actual experience. Pneumonia is counted as the sixth disease in fatality. Thousands die every week from diseases classed as pneumonia, pleurisy, congestion of lungs, acute bronchitis, etc., many of which might be promptly relieved if the physician would tie up an arm, tap a vein, and relieve the overcharged lungs, heart, and brain of their superfluity of blood. I have had no experience in bleeding young children, except by leeches; they seem to answer the purpose.

During the late epidemic of gripe a condition prevailed resembling pneumonia and yet seeming to be the exact opposite. There was cough, slight dyspnoea, rusty or rather

plum-juice sputa, lividity of skin, and prostration, this state of affairs coming on slowly in the course of an attack of gripe, and being due to a weak heart and passive venous congestion. These cases yielded readily to stimulants and heart tonics,—whiskey, digitalis, strychnine, etc. In one of these cases, after convalescence, on exposure to cold, there was a sharp, decided chill, fever, and pneumonia of the regular type; patient had had valvular disease for several years, and was seventy years of age. Case ended fatally. I used leeches freely. I believe that in all cases of acute congestion or inflammatory disease the most prompt and efficacious remedy is bloodletting. In case of high fever, try the temperature before and after and be convinced.

In pneumonia do not wait until you find a so-called sthenic case with a strong heart and full, bounding pulse; if you do, you may wait forever; but place your finger on the weak, rapid pulse of pneumonia and observe it slow down and become stronger as the tension is relieved; see the dusky veil lifted from the face as if by magic; see the labored breathing become easy; watch the expression of unspeakable relief that steals over the countenance, and the next time you get a similar case go do it again.

Venesection is the most prompt and efficacious remedy at our command in all the acute inflammatory and congestive diseases; also in apoplexy, threatened and developed, puerperal and uræmic convulsions, for weak and irregular labor-pains in plethoric subjects, in threatened abortion, and as a means of relieving the distress and discomfort of pregnant women, due to plethora and general venous congestion. The operation is perfectly simple, and in the majority of cases you have no doubt of the certainty of the result. I have frequently used it in the above-mentioned diseases and conditions.

In ordinary cases of threatened abortion we often find the happiest results. The following case is extraordinary:

Mrs. W., aged thirty-two; married thirteen years and aborted thirteen times at all periods of gestation, generally between the fourth and the sixth months. Several of the children had been born alive and lived from a few minutes to twenty-four hours. She never went beyond the sixth month. There was no history of syphilis; no means used to cause miscarriage; antisyphilitic and all other treatment, under the best counsel I could get, were of no avail. She could tell forty-eight hours in advance that a miscarriage was going to occur by a feeling

of pain and weight across the loins and by a peculiar prickling and tingling sensation over a surface the size of the hand, which she described as within the womb.

*January 10, 1887.*—Is now three months pregnant. Notified her to send me word as soon as a miscarriage threatened. She sent for me February 6. I bled her freely. Sent for again March 3; bled her again. July 13, delivered her of a healthy child at full term; living now.

In 1890 she became pregnant again. Taken with the usual premonitory symptoms while away from home. July 2, miscarried at the fourth month.

In November, 1891, she became pregnant again. She sent for me and I bled her, at her request, on the following dates: February 8, March 1, April 2, May 4, May 18, June 2, June 24. August 31, delivered her at full term; a healthy child; weighed nine and a half pounds. Now living and healthy. She said that as she either had to be bled or have a miscarriage, she preferred the former.

In conclusion, permit me to quote the great and learned author of the "United States Dispensatory," Dr. George B. Wood. He says it is a fatal lesson to teach the inexperienced that we are to treat inflammation always as a friend and never as an enemy. "My own personal experience with venesection is certainly in its favor. Having been in my early professional life opposed to the excessive use of the lancet, then in vogue, I have no prejudices in favor of the remedy, and yet I can most conscientiously declare that I have almost never had occasion to regret using it in inflammation, but, on the contrary, have had frequent occasion to regret that it had not been used more freely. I know as positively as I can know anything from observation, that it is not only capable of relieving inflammation in the early stages, but will often cut it short and lead to prompt convalescence."

The rule is, I think, universal, that in all cases of inflammation so serious from degree or position as to involve life in danger, bleeding should be employed in the early stages, unless forbidden by general delirium or the low grade of the fever.

My dear medical brethren, these are times of therapeutic pessimism,—

"When schizomicetes grin in glee,  
When microbes dig their holes,  
When germs feel free to split in three  
And exult in their septic souls."

When it is considered the mark of a weak intellect to believe that quinine and the salts

of bark are antiperiodics; that there is any use in an emetic or cathartic; that there is such a thing as an expectorant, a diuretic, or a diaphoretic; when it is an unpardonable medical sin to give calomel to act on the liver; when iodides and bromides are prescribed by inhalation or absorption at the sea-side and iron from a spring in the mountains; when, if you are called to see a case of sickness, it is your first duty to examine the drain and prescribe accordingly for the drain; when great is sanitary science, and doctors who would prefer to be paid by the State, and who do not like the care of sick people, are its prophets; I have felt like lifting my voice and recording my testimony in favor of one of the old remedies and of the old way of using anything in heaven above or the earth beneath to help a sick man get well. That while hygiene and sanitation require part of our attention, still, our main duty will always be the care of the individual sick, the alleviation of suffering, and the saving of individual human lives; and that the neglect of all proper means for these ends, even though those means are not found in the therapeutics of the United States Dispensatory, will do more harm and cause more loss of life that can be saved by all the so-called sanitary science now in vogue.

#### THE PREPARATION OF SURGICAL CATGUT.

A GRADUATING THESIS TO WHICH WAS AWARDED THE DR. L. J. C. KIMMEL PRIZES, June, 1894.

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**S**URGICAL catgut, properly prepared for employment as a suture, ligature, or drain, deserves a place in the material equipment of the modern clean surgeon. Its non-use by many and limited use by all can be attributed in most part to its unreliability as regards,—

- (a) Its tensile strength.
- (b) Its freedom from septic infection.
- (c) Its persistence in the tissues as a competent suture or ligature.

Theoretically, we have a twisted animal-tissue cord that is clean, strong, flexible, unirritating, and capable of absorption by the living body tissues.

In actual practice, we find it often septic, weak, yielding, sometimes brittle and totally unfit for surgical purposes.

This thesis is, therefore, written to ascertain if there be any absolutely reliable method of preparation to obviate these imperfections.

*History.*—The history of sutures and ligatures from the earliest times down to the present is an interesting one. Formerly, the universal custom of carrying sharp instruments of defence naturally resulted in a necessity for sewing up the flesh wounds. This may in part explain why the suture was known and used long before the ligature. In reviewing the history of the suture, we find that the early surgeons used them made of silk and vegetable fibre, such as hemp, linen, and cotton. Metallic wire was next employed in conjunction with the above. But not until the nineteenth century was animal tissue introduced, although we find some proof of its occasional employment by Rhazes, 900 A.D., and Albucasis about 1100 A.D.

Till the sixteenth century, the barbaric custom of checking hemorrhage by direct applications of boiling oil or red-hot iron was still in vogue; but in the latter half of this period Ambrose Paré suggested the humane and most natural method,—viz., that of tying the severed blood-vessels. Thus the ligature became known. However, Antyllus, in the fourth century, employed a ligature in his operation for aneurism, and there is evidence to show that the ligature was known by others before Paré, but had been forgotten; so Paré may be said to have rediscovered it. Nevertheless, the hot iron was still used by many as late as 1800 A.D.

Paré made ligatures of vegetable material and silk. It remained for Physick, in 1814, nearly two centuries later, to demonstrate the practical advantages of the animal ligature. He made ligatures of chamois leather, cut in narrow strips and rolled between marble slabs until round and smooth. Dorsey followed Physick's example. Sir Astley Cooper, in 1817, was the first to use violin strings, or "catgut," and through his success it was introduced into practice. Owing to the septic character of these animal ligatures, which were not prepared in accordance with the requirements of modern surgical cleanliness, their use was greatly diminished during the following years, until Sir Joseph Lister, in 1869, *very enthusiastically* advocated the use of the catgut strand, and taught the important lesson that catgut ought to be prepared before being buried in the tissues. His original method consisted of soaking the crude catgut in a five-per-cent. carbolic-glycerin solution. This is essentially his "old preparing liquid," and will be referred to later.

Various other animal tissues have from time to time been suggested and used as ligature material. Among these are kangaroo tendons,

tendon of the dog's tail, tendon of the lepus, or mule-eared rabbit, sinews of the deer and whale, strips of the middle coat of ox aorta, sciatic nerve of the calf, horse-hair, etc.

*Manufacture.*—Why catgut is so named remains unexplainable. It might be suggested that surgeons, at first, used violin strings (and, in fact, some still purchase their supply from violin dealers). It is not unreasonable to believe that ancient string-makers employed the feline intestine. Tradition tells us that the choicest Roman strings came from the lions and tigers of the arena.

The etymology of the word casts some light upon the subject. Catgut is supposed to have been originally "kitgut" or "kitstring,"—"kit" meaning a fiddle may have been confused with "kit" meaning a little cat.

Whatever the reason, the trade name "catgut" has survived, notwithstanding that modern catgut is, in reality, sheepgut.

To one starting out to investigate the process of manufacture there is early manifested an element of taciturnity and even suppression of all-important information, on the part of manufacturers and their agents, as to the exact manner in which catgut is made. It was, therefore, with a great deal of gratitude that the writer accepted the kind invitation of one of the few manufacturers in this country to visit his factory and see the actual operation.

The small intestines of the sheep arrive in barrels from the abattoir in as fresh condition as practicable. They are washed in tubs of water, then passed between rollers; this squeezes out all contents of the intestine with some of the villi of the mucous layer. The intestines are next macerated in a weak aqueous solution of potassium hydrate for several hours, the object being to loosen up the muscular and mucous layers.

The muscular layers with the adhering peritoneum are now scraped off by an ingenious set of rapidly revolving blunt knives.

The same thing is sometimes accomplished by hand by scraping the intestine with a single blunt knife over a flat board. This is customary in Europe.

After all muscular fibres are removed, the process of wringing out between rubber drums, similar to the clothes-wringing process, is carried on until all of the mucous layer is squeezed out. This requires alternate washing in water and wringing; usually three or four times suffice to deprive the intestine of all its coats save the submucous connective tissue.

Notwithstanding the very rough treatment accorded this delicate tissue, it is still intact

as a tube, and may be inflated throughout its entire length.

The next step is to twist and dry these tubes. Some makers use only the half-cylinder of the intestine away from that to which the mesentery is attached. They claim that the outer half contains less fat and blood-vessels, and consequently is stronger in connective tissue.

To this end, they use a double-edged knife inserted in a suitable handle to split the tube into two half-cylinders, the thinner one being saved for fine strings.

The various sizes of catgut depend upon the number of tubes or half-tubes taken together and twisted. The medium sizes contain three or four strands and are prepared in the following manner: The cleaned tubes, still wet from the stripping process, are held together at one end in a clamp, while the other end is attached to a revolving spindle. Twenty to thirty revolutions are given, then the free end is also clamped and the gut allowed to partially dry; it is then subjected to sulphur fumes for half an hour; this twisting and bleaching process is repeated, usually three times or until the gut is sufficiently twisted, after which all unevenness is reduced by rubbing with moist cloth and pumice. It is now removed from the "frame," is coiled in small packages, and wrapped in tissue-paper ready for the market. This is essentially the complete process of manufacture of crude catgut.

Catgut factories belong to the class of disagreeable manufactures called by the French "boyauderie." Early in this century, in France, the attention of medical men and legislative bodies was called to the unhealthfulness produced by the boyauderies, and successful steps were taken to abate the nuisance.

The factories are scattered over Italy, France, and Germany, also a few in Great Britain, and there are two in the United States of America. The quality of the gut is influenced by the climate and by the condition of the animal. Thus, the mild and sunny climate of Italy is preferred to the moisture of England. The old and poorly-nourished sheep (in France sometimes the horse) are better, on account of less fat and more connective-tissue matrix in the intestine. It may be of interest to note that out of this same material other articles are made, as the sausage-casings, textile and silk-mill strings, racket and bowstrings, musical gut string, whip-cord, clock-weight cords, one kind of condom (from the submucosa of the cæcum), and recently, Halstead, of Johns Hopkins Hospital, has introduced a "gut-wool," made by shredding the submucosa with

a tobacco-cutting machine. This gut-wool is used to plug bleeding-points in bone.

In reviewing this conversion from the natural fresh intestine, we are at once impressed by the possibilities of infection and contamination. These, at first, seem unnecessary, and may even offend not only our surgical, but our æsthetic sense of cleanliness. However, from the very nature of the article, it is impossible to treat the intestine from beginning to end in an antiseptic manner. No doubt the early treatment by potassium hydrate immersion and sulphur fumes serves a feeble antiseptic purpose, but is far from complete. And this fact emphasizes the necessity for thorough disinfection of the finished product; for to the above objections must be added the possibilities of anthrax bacilli and spores, or other infectious material, pre-existing in the sheep, also infection from exposure of handling in transport to the surgeon's laboratory.

*Desirable Qualities.*—Absolute sterilization is by far the greatest desideratum! But the gut is well-nigh worthless unless as much care be exercised to render it sufficiently strong, flexible, inelastic to stress, non-irritating, and capable of absorption.

These qualities should be tested with a view to the actual condition under which catgut is placed when applied surgically.

*Histology.*—As has been shown, catgut is derived from the submucous coat of the sheep's small intestine. It is therefore connective tissue. This consists of a matrix of inextensible white wavy fibrillæ cemented into bundles, and associated with these are some curved yellow elastic fibres.

It is this matrix, containing the usual fat, that we must consider in our treatment.

*Chemical and Physical Properties.*—Were catgut as simple in structure and use as gauze, there would be no difficulty in finding an appropriate method of preparation. But, on the contrary, it is a rather complex substance, and before we can rationally discuss disinfectant treatment, the chemical and physical properties should be considered.

*Chemical Properties.*—The substance of which the matrix is composed is collagen ( $C_{100}H_{149}N_{31}O_{86}$ ), a complex albuminoid and probably anhydrous gelatin. So these fibres may be said to be organized collagen or gelatin, and must be treated as such.

It is proved chemically that by hydrating agents, as heating by superheated steam, gastric juice, etc., collagen is converted into peptone-like substances. The practical point to be adduced is that sterilization of catgut by



superheated steam is contraindicated in that the gut tends to turn into a peptone-like substance. This was further proved by an actual test in which the gut was very much softened by exposure to superheated steam.

Also, it might be observed that catgut would readily succumb to gastric juice, and therefore, were that substance present, unless the gut were thoroughly tanned by chromic acid, mercuric chloride, or tannin, it should not be used.

Gelatin (the anhydrous collagen) may be obtained by boiling or long soaking catgut or connective tissue in water.

It is, therefore, impracticable to use water in treating catgut. Collagen is insoluble in alcohol, ether, chloroform, xylol, turpentine, juniper oil, clove oil, etc.

The practical point to be noted is, these agents may be employed to dissolve out fat, or may act as media for disinfectant or storage purposes without injury to the tissue substance.

Collagen is insoluble in oil or glycerin; this suggests sterilized or antiseptized oil and glycerin as suitable storage fluids.

Collagen is altered by tannic acid and mercuric chloride. Chromic acid, alum, etc., produce a tanning effect similar to tannic acid and mercuric chloride. This explains how chromicized gut is not so readily absorbed by the tissues.

By actual test I observed that all astringent chemicals, such as chromic acid, permanganate of potassium, strong carbolic acid, and strong bichloride of mercury, lessen the flexibility, render it brittle and weak. D. Braden Kyle (Philadelphia) in studying effect of fluids upon tensile strength, found that all aqueous solutions weakened catgut by as short immersion as twenty minutes. Alcohol and juniper oil had not this effect. This suggests that catgut may be weakened at the time of operation by placing it in an aqueous solution of an antiseptic, such as bichloride of mercury. Alcoholic sublimate solutions are to be preferred, therefore.

*Physical Properties.*—The natural deposit of fat in the meshes of the matrix is disorganized in the drying and contracting of the gut, and soaks through the tissue, interfering with any chemical treatment, such as with mercuric salts, and prevents thorough saturation of fluids.

It should be dissolved out by ether or xylol at the beginning.

Catgut is hygroscopic and swells up in water, becoming opaque and soft.

Raw catgut swells when immersed in serum; this indicates treatment to prevent this absorptibility, for in practice the ligature, suture, or

drain is in the presence of serum, and, unless proof against any great amount of absorption, the knot will become "slimy" and slip, the suture will yield and cause gaping of wound, the drain will become a plug.

Lister early recognized this unfortunate property, and endeavored to change the character of the gut by chemical treatment. He found that carbolic acid in oil would produce the desired end. If unprepared catgut was soaked in *dry* carbolic acid and oil, the knot would slip when steeped in serum.

"However, if, instead of using carbolic acid in crystallized form, it be first liquefied by water, we secure a proper gut that does not slip."

On the contrary, Lister took some very *old* catgut and found it not necessary to use the aqueous solution of carbolic acid. Therefore, mere age was sufficient. Thus, incidentally, we find scientific evidence of "seasoning."

As with all twisted strands, alternate moistening and drying tends to untwist the gut, with consequent weakening of tensile strength. To avoid this and the snarling, it is suggested that, after having cleaned the gut of its gross dirt by strong soap, it be wound moderately tight about glass cylinders (the ordinary test-tube would do); each coil should have free access to the fluid. (This is impossible when gut is wound tightly on spools.) This procedure is doubly convenient in that it checks untwisting and snarling, and also affords an easy way to handle from one solution to another.

When catgut is knotted its strength is considerably lessened, owing to the brittleness at the point of tension in the knot. This is a very important item, and, to my knowledge, has not been advanced before in discussing tensile strength of catgut.

Nor am I aware of any tests in which the gut was knotted before applying tension, it having been considered sufficient to test in the usual unknotted form.

When ligating or suturing we invariably tie a knot, then strain to tighten it, and often come to grief in so doing. It is obvious, therefore, that catgut should *always* be judged and tested as to its behavior when knotted.

By a series of tests it will be demonstrated that catgut is able to withstand much less strain when knotted than when unknotted.

*Methods of Preparation.*—Since Lister first demonstrated the necessity of special preparation of catgut for surgical purposes, innumerable variations and suggestions have been proposed, but of these few have survived the test of practicability. Some methods have been

too laborious to carry out, but the majority have been advocated with the single purpose in view of antiseptis, totally ignoring the physical and chemical properties of catgut. Many have prepared the gut, and by negative results from test-tube cultures have proclaimed their gut sterile.

Results from culture tests are worthless, unless the gut has been shredded and macerated so as to be certain that each particle of the gut has been explored. And, moreover, unless any antiseptic in it has been neutralized, the culture experiments should be checked by implantation in susceptible animals of specifically infected gut subsequently treated by the method of sterilization in question.

In arriving at clinical evidence of the behavior of catgut in wounds, we should bear in mind that it is an albuminoid substance and an excellent culture material.

Mikulicz (*Klinische Jahrbuch von Güttstadt*, 1889) emphasizes this point and says,—

“Suppuration after the use of catgut is not because the gut is not sterile, but because it is an excellent medium for the growth of micro-organisms. Good results can only be obtained when the disinfection of the wound is absolutely certain.”

To further this claim, I quote Landerer (*Congress der Deutschen Gesellschaft für Chirurgie*, 1889), who gives the following method for the treatment of dry wounds: “The preparation of the patient, instruments, the field of operation, the surrounding skin, the preparation of the hands of the operator, are all carried out after the methods of Kummell and Fürbinger. The instruments are placed in a three-per-cent. carbolic acid solution. After each cut of the knife the wound should be filled with sterilized gauze. Pads of gauze are used in place of sponges, these being sterilized in steam. All bleeding-points are stopped by torsion, when possible. No drainage is to be used. To prevent the formation of cavities, the wound is closed with a Neuber's continuous étage suture. The wound is covered with a compress of gauze and cotton and the whole surrounded with a moderately tight bandage. Catgut is used for sutures, and is sterilized after the method of Von Bergmann and preserved in alcohol.”

Cultures were made from all materials used, but gave negative results. Notwithstanding the treatment, many wounds suppurated, especially when the catgut was used.

All the antiseptic apparatus was examined, but nothing could be found wrong.

No changes have been noticed in the wound

until the sixth day, when silk sutures are removed. On the eighth or tenth day the temperature rises, the edges of the wound are swollen and red, and by separating the edges of the wound, deep suppuration can be seen.

The abscess was almost always found in the deeper parts of the wound where the catgut sutures were used.

The suppuration cannot result from a decomposition of blood, because all bleeding has been stopped.

The preparation of the catgut used in the above operations was as follows: The ordinary red gut was wound around large glass spools, and was placed in a five-per-cent. sublimate alcohol (the latter often changed). When this solution remained clear the gut was placed in absolute alcohol. All the catgut used had been many weeks in alcohol. Small pieces of the gut were placed on the various culture media, with, however, negative results, proving that the infection does not arise from the outside of the gut. As the outside of the catgut is absorbed in the wound the central part of the thread comes in contact with the tissues. This probably explains the fact that the abscess generally develops about the eighth or tenth day. The author then took small threads and separated the fibres of the gut with sterilized needles. The fibres thus prepared were dried for two to three hours in order to allow some evaporation of the fluid in the central part of the gut. These were then placed on the culture media as before, and the result was still negative.

Thinking that the germs might still exist in parts that it was impossible to separate, the gut was softened in bouillon and still no result.

Kummell claims that before the wound can be closed it becomes filled with germs, and these act as the source of primary infection. “Possibly the failure to find germs was due to the fact that the sublimate in the gut was not neutralized by ammonium sulphide.”

Robb and Ghrisky (Johns Hopkins University) have shown that, under the most rigid antiseptic treatment, micro-organisms are constantly found attached to sutures when these are removed from wounds made by the surgeon, and that skin abscess frequently results from presence of the most common of the micro-organisms found in skin, the *staphylococcus epidermis albus*. This is of slight virulence.

The authors conclude, “A wound, at some time of its existence, always contains organisms. They occur in the stitches or in the secretions.

“The number of the bacteria is influenced by the constricting action of the ligature or

drainage-tube, or anything interfering with the circulation in the tissues."

The fact that in their experiments even wire and silkworm-gut sutures were not exempt, but much less infected than the catgut, is of much significance. We have every reason to believe that the micro-organisms of the catgut sutures fed and thrived on the softening catgut, which was impossible in case of wire and silkworm-gut. This evidence certainly ought to lead us to suppose that septic wounds, with well-prepared catgut in proximity, are not due to septic infection from the gut, but to the fact that the micro-organisms find even the most aseptic gut a suitable nidus for growth. This, indeed, is most discouraging; to think that after all our extensive sterilization of the gut we have but succeeded in producing a perfect culture media for any stray bacteria in the wound. This is certainly an indication for infiltrating the gut with some antiseptic that will inhibit the growth of bacteria in it, and at the same time not render it weak and brittle. This infiltration should be made after the raw gut has been thoroughly sterilized. With this in view, I experimented with several antiseptics and obtained the following results:

(a) Bichloride of mercury, in germicidal strength as 1 to 1000, weakens the gut when applied for any length of time, by forming an albuminate of mercury.

(b) Carbolic acid renders the heat-sterilized gut brittle. It is to be observed here that the carbolized gut of the instrument-dealers, which is strong, has never been completely sterilized, but simply immersed in carbolic acid and oil, and, as will be shown later, has been proved septic by bacteriological tests.

(c) The oil of juniper would readily mix with the lymph of the surrounding part, and therefore be of no use for infiltration purposes.

(d) Chromic acid renders the gut brittle, and cannot be used in all tissues; however, it is invaluable for purposes of preserving the gut intact in the body tissues for long periods, and will be referred to under topic of "chromicizing."

(e) The double cyanide of mercury and zinc restrains growths of bacteria and is insoluble in the discharges of the wound. This seemingly answers perfectly; but the salt is almost insoluble in alcohol and only slightly soluble in water, consequently I was unable to infiltrate the gut with it.

(f) Many of the newer antiseptics are unobtainable in the American market, else would have been tried.

(g) Iodoform, although strictly speaking not

an antiseptic, might be used, and can be infiltrated to a slight extent in the gut by soaking it in an ethereal solution of iodoform.

(h) Pyoktanin, or methyl-blue, has antiseptic qualities, is non-poisonous and non-irritating. Sternberg quotes Jaenicke as follows:

Staphylococcus pyogenes aureus re-	
strained by solution of.....	1 to 2,000,000
Bacillus anthrax.....	1 to 1,000,000
Streptococci pyogenes.....	1 to 333,300

In blood-serum stronger solutions are required. Thus, for staphylococcus pyogenes aureus, 1 to 500,000, and a solution of 1 to 1000 killed all of them. Methyl-blue is readily soluble in alcohol and permeates into every fibre of catgut, and does not materially lessen its tensile strength or affect it in any deleterious way. Pyoktanin is not a perfect substance for the purpose at hand, but approaches nearer than any other antiseptic obtainable, and possesses sufficient virtue to be mentioned. The method of preparing the gut with pyoktanin is as follows: The crude gut is deprived of its fat by soaking in ether twenty-four hours. The gut is then sterilized by boiling in absolute alcohol for one hour in a closed jar; then put it in alcoholic solution of pyoktanin 1 to 1000 for twenty-four hours. It may be stored in dry jars or stored in juniper oil. It cannot be stored in alcohol, for the alcohol would in time dissolve out the pyoktanin, and, on the other hand, juniper oil fixes the substance so that it will not stain the hands in using.

*Sterilization.*—The general methods of sterilization are as follows: By heat, either dry or moist; by immersion in germicidal solutions, such as carbolic acid, juniper oil, bichloride of mercury, hydronaphtol, chromic acid. The great objection to simply immersing the gut in these solutions is that we cannot be assured of the sterilization of gut clear to the centre. Juniper oil is not capable of destroying the anthrax spore, and all of the others, if of sufficient strength to destroy anthrax, destroy likewise the strength of the gut. Bichloride of mercury forms an albuminate of mercury pellicle and prevents the thorough saturation of the sublimate.

Braatz (Bruns, *Beiträge zur Klinische Chirurgie*, 1891) sterilizes catgut as follows: The raw gut is allowed to soak for two days in ether and is thus deprived of its fat. The ether is removed once or twice. From ether the gut is placed directly in 1 to 1000 aqueous solution of corrosive sublimate and allowed to remain for twenty-four hours. From the sublimate it is transferred to absolute alcohol and

kept there until used. Or, after soaking in ether, the gut is exposed to dry heat at a temperature of 140° C. for four hours, and afterwards kept in absolute alcohol.

Brunner (Bruns, *Beiträge zur Klinische Chirurgie*, 1891) conducted a large number of experiments in regard to the sterilization of catgut, in which the results obtained by growth on artificial culture media were checked by implantation of the gut into tissues of animals, mostly guinea-pigs. He found that catgut which is infected by the anthrax bacillus could be soaked for six hours in a one-tenth-of-one-per-cent. solution of sublimate, and if the sublimate were neutralized by sulphide of ammonium, that inoculation of the gut into the tissues of animals produced death. If the gut was introduced into the tissues without previous neutralization of the sublimate, no bad results followed, this proving that when the antiseptic remained in contact with the gut it inhibited the growth of germs which had not previously been destroyed. It seems clear that the practical point to be deduced from this is that the gut should be impregnated with some antiseptic. A 1 to 500 sublimate solution seemed to destroy all the germs in the catgut after one or two hours' soaking. The catgut employed in these experiments was not deprived of its fat.

Braatz has shown that when the fat is taken out by ether the sublimate acts much more rapidly and powerfully upon the germs contained in the gut.

As a result of his experiments, Brunner found that after soaking the raw catgut in ether for two days and then in 1 to 1000 sublimate for twelve hours, it could be preserved in a solution of sublimate one-tenth of one per cent., absolute alcohol nine hundred parts, glycerin ten parts, and would be found to be absolutely free from living germs.

Reverdin has shown that when catgut is entirely deprived of its fat and is slowly heated so that the hygroscopic moisture is driven out, the temperature can be carried to 140° C., and it is entirely sterile and sufficiently strong for surgical use.

Brunner, believing that dry heat is less penetrating than when employed through a liquid medium, used xylol, a liquid which boils between 136° and 140° C. He was not successful in preventing growths in culture material by two hours' heating of the xylol to boiling-point. A combined method of first heating for three hours in xylol heated to 100° C. and then soaking for three days in a sublimate-alcohol-glycerin solution rendered the gut absolutely sterile. The xylol is heated by placing the jar

containing it and the catgut in an ordinary steam sterilizer. (Brunner, *Beiträge zur Klinische Chirurgie*, 1890.)

Zweifel prepares the raw catgut by soaking it forty-eight hours in a 1 to 500 aqueous sublimate solution, then for eight days in juniper oil, and afterwards storing it in absolute alcohol.

As to the tensile strength of the catgut prepared by the different methods, all the disinfected catguts were weaker than raw gut. Chromicized catgut and that prepared according to Reverdin's method showed the best tensile strength. This last fact is especially interesting as showing that the raw gut bears a temperature of 140° C. without injury.

Brunner remarks that this high temperature always renders a strand somewhat brittle, and it is to be noted that tests were applied with the gut unknotted. The sublimated catgut by no means came at the end of the list, but was about medium grade so far as strength was concerned. He states that catgut which has lain for three years in 1 to 1000 sublimate alcohol has still satisfactory strength.

The bacteriological examination shows that all raw catgut gives growths in nutrient culture materials.

The sublimate catgut, in three hundred experiments, showed, almost without exception, no cultures. This sublimate catgut was taken directly from the instrument-makers' samples, and not prepared by the surgeon. Even when the gut was taken out of the alcohol-sublimate solution and passed through the non-sterilized fingers and then placed on culture surfaces, no growths developed. And when fresh cultures of pyogenic micro-organisms were rubbed on the surface of the catgut, growths often did not occur. The carbolyzed, chromicized, and juniper catgut all showed growth in a considerable percentage of the experiments. The bacillus which is most commonly found in catgut, which in these experiments was found in the culture material, is, however, not pathogenic.

Reverdin's catgut was found completely germ free. The result of all these experiments on catgut obtained directly from the market showed that sublimated and Reverdin's catgut were sterile, but that the carbolyzed, chromicized, and juniperized catguts frequently contained micro-organisms.

As a result of all his experiments, Brunner concluded that the best methods of preparing catgut is to thoroughly scrub it with a potash soap; then, either directly or after half an hour's soaking in ether, store it for twelve hours in watery sublimate solution 1 to 1000;

then to store it in sublimate one part, absolute alcohol nine hundred parts, glycerin one hundred parts, and immediately before use it should be dipped in watery sublimate solution.

Brunner's final method, published a year later in the same journal, consists in depriving the gut of fat by a two days' soaking in ether, in putting it in a jar which is then filled with xylol and closed (the ordinary preserve jar answers best for this), then heating it for three hours in a steam sterilizer. The xylol is washed out with absolute alcohol and the catgut is preserved in the alcohol-glycerin-sublimate solution already given, and in three days is ready for use.

At the University of Pennsylvania Hospital ligature gut is prepared as follows:

The raw gut is allowed to soak in juniper oil for thirty-six hours, then transferred to absolute alcohol, then wound by sterilized hands on glass spools and put in closed jars of absolute alcohol, and boiled in a steam sterilizer for half an hour; stored in absolute alcohol.

Dr. George R. Fowler, of Brooklyn, has devised an ingenious U-shaped glass tube, each arm being four inches in length. Pieces of gut of ligature length are inserted, the tube filled with alcohol, and ends hermetically sealed. They are then put in a water-bath and boiled for half an hour. Alcohol, under pressure, can be heated to 93.3° C. over the water-bath. These tubes are convenient in private practice. When ligatures are required, the tube is broken by separating the two arms.

When prepared this way, anthrax-infected gut was afterwards sterile.

The late Dr. William Goodell dissolved out fat by commercial ether in twenty-four to forty-eight hours, changed once; gut now immersed for forty-eight hours in 1 to 1000 alcoholic bichloride of mercury, then wound on glass spools and preserved in a mixture of juniper oil two parts, alcohol one part.\*

**Chromicizing.**—The benefits of chromicized catgut in certain cases are well known and appreciated. It, however, is somewhat irritant, and cannot be used in brain and eye surgery. The principle underlying the process of chromicizing is one of tanning, so that the living tissue will not so readily absorb the gut. Care must be taken not to carry the process too far, else the gut will be too brittle for use.

Brunner has shown that chromic acid, of strength taken for chromicizing, does not *per se* sterilize the gut. We are then to infer that the gut must be sterilized by some other means.

Heat affords the best means; but it is to be noted that catgut sterilized by heat does not tolerate chromic acid, carbolic acid, or subli-

mate up to the degree that it would previous to heating.

Professor Doderlin, Leipsic, first soaks the gut in chromic acid solution 1 to 10,000 for ten minutes; then, after evaporating in the air to dryness, sterilizes the gut after Reverdin's method of slowly heating up to 130° C. for two hours. Stores the chromicized and sterilized gut in absolute alcohol.

The method usually pursued in America is: Take a given weight (w.) of dried juniperized gut, put in jar and cover with water, 20 w.; then add carbolic acid, 1 w., and chromic acid,  $\frac{w}{20}$ , and leave to soak for forty-eight to seventy-two hours, according to size of gut. The threads must be free and loose so as to give free access to every portion of gut. Store in alcohol.

Juniperized catgut has been proved bacteriologically not free from micro-organisms.

No doubt the good clinical results from use of this last chromicizing method can be attributed to the facts that the raw gut happened to be exceptionally free from virulent bacteria, and that the central portion of the gut, which probably contained unsterilized material, was not exposed to softening and culture influences until the surrounding tissues had regained their normal power.

**Storage.**—By experiment I found that bichloride of mercury and carbolic acid were unsuitable for storage purposes, but that alcohol or juniper oil was to be preferred.

Sterilized glycerin or olive oil does not materially lessen the strength. The following tabulation shows the relative strengths of the same sample of catgut after having been stored in different solutions.

Method.	Strength in alcohol.	In juniper oil and alcohol.	Alcohol-glycerin sublimate.	1 to 20 carbolic.
	Pounds.	Pounds.		
Brunner.....	18	12	6%	7
Reverdin.....	14	14	6	8
Pyoktanized.....	18	12	4%	5%

**Tests.**—The bacteriological tests of catgut prepared by the various methods have been extensively and successfully carried out by many eminent bacteriologists and surgeons. It is, therefore, not my province to repeat this mode of testing in the hope of either agreeing or disagreeing with them. However, one of the practical tests—that of the tensile strength, *especially when knotted*—has not been fully investigated.

**Methods.**—The methods for testing the tensile strength were as follows:

The tensile strength in all was ascertained on a slow, continuous-strain testing-machine.

- 1. Tensile strength ascertained of raw gut.
- 2. Tensile strength ascertained of raw gut, knotted.
- 3. Tensile strength ascertained of prepared gut.
- 4. Tensile strength ascertained of prepared gut, knotted.
- 5. Tensile strength ascertained of prepared and knotted gut after implantation in the body tissues for different lengths of time.

*Experiment.*—Under antiseptic precautions, pieces of knotted catgut, prepared after Goodell, Reverdin, Brunner, University of Pennsylvania Hospital, Zweifel, pyoktanized, and chromicized methods, were implanted in definite order in the lumbar muscles of a dog. The first implantation was followed by a period of three days, after which the operation was repeated on each of the three succeeding days. The dog was chloroformed twenty-four hours after last implantation, wounds examined, the pieces of catgut removed in reversed order of implantation and carefully arranged according to time and method. Those implanted last, therefore, remained one day. Those implanted first remained for six days. These pieces were then labelled and tested for tensile strength. The results should be considered as relative. The same size raw gut was used in all these experiments. The following tabulations show results:

Tensile Strength Tests.

Method.	Strength un-knotted.	Strength knotted.	Loss when knotted.	Loss when prepared and knotted.
	Pounds.	Pounds.	Pounds.	Pounds.
Raw catgut (E) .....	25	16½	8½	.....
Goodell.....	23	14½	8½	10½
Reverdin.....	23½	14	9½	11
Brunner.....	23½	12	11½	13
University of Penn- sylvania Hospital }	23	12	11	13
Pyoktanized.....	23½	12	11½	13
Zweifel.....	22	11	11	14
Chromicized .....	23	9½	13½	15½

Tests of Implanted Catgut (knotted).

Method.	Strength when im- planted.	First day.	Second day.	Third day.	Sixth day.
Goodell.....	14½	14	12½	8	6
Reverdin.....	14	13	10½	8½	5½
Brunner.....	12	11½	9	8	5
University of Penn- sylvania Hospital }	12	11	8½	7½	4
Pyoktanized.....	12	12	10	8½	6
Zweifel.....	11	10½	8	6	5
Chromicized .....	9½	9½	9½	9	8½

*Conclusions.*—In the surgical preparation of catgut:

- (a) The gross dirt should be quickly removed by potash soap.
- (b) As little water as possible (better if none) should come in contact with the gut.
- (c) The fat should be removed by ether, juniper oil, or xylol, for fat interferes with any subsequent antiseptic treatment.
- (d) The gut will be stronger if, before sterilization, it be wound moderately tight around glass cylinders, such as test-tubes or beakers. Each part of coil should have free exposure to the fluids.
- (e) We can never be absolutely certain that gut is sterile unless heat of germicidal degree has been applied.

A temperature of 140° C. for three hours does not materially lessen its tensile strength. Hence the two absolutely reliable methods of sterilization are: 1. Dry heat slowly carried up to 130° to 140° C. and continued for two or three hours. 2. Boiling in absolute alcohol or xylol, in closed jars, in steam sterilizers, continued for one to two hours.

(f) Storage solution should not contain any antiseptic that weakens the gut, such as bichloride of mercury and carbolic acid. Absolute alcohol and juniper oil are the best solutions for storage. Pyoktanized gut may be stored in juniper oil or dry sealed jars.

(g) Better results are obtained if the gut is taken directly from some antiseptic solution. Hence just before use it should be placed in sublimate alcohol 1 to 1000.

(h) In testing prepared catgut, test cultures should be thorough,—i.e., every particle of gut should be explored, and antiseptics, such as bichloride of mercury, should be neutralized. Cultures should be checked by implantation in susceptible animals.

(i) The tests for tensile strength should be made with knotted gut. By the tabulations, it will be seen that there is considerable loss of strength when the gut is knotted. Thus, the relative brittleness of gut by methods in which heat was used is as follows:

Reverdin the least, then University of Pennsylvania Hospital, Brunner, pyoktanized, and chromicized in their order of brittleness, chromicized being the most so.

(j) That catgut prepared by chromic acid, bichloride of mercury, and pyoktanin is retained longer in tissues, and chromicized longest.

(k) Sterilized gut may be infiltrated with the antiseptic pyoktanin without deleterious effect upon the gut. This infiltration is done

to inhibit micro-organismal growth in the gut itself.

#### SYLLABUS.

*Subject.*—The Preparation of Surgical Catgut.

*Thesis, or Statement.*—Catgut Deserves a Place in Surgical Material Equipment—Its Unreliability—Are there Reliable Methods of Sterilization?

*History.*—Sutures known by the Ancients—Discovery of Ligature by Paré—Animal Tissue Ligature of Modern Use—Catgut first used by Sir Astley Cooper, first prepared by Sir Joseph Lister.

*Manufacture.*—In Europe and America—Process—From Submucosa of Sheep's Small Intestine—Possibilities of Infection.

*Desirable Qualities.*—Absolute Sterilization—Also must be Strong, Flexible, Inelastic to Stress, Non-Irritating, and capable of Absorption.

*Histology.*—Connective Tissue.

*Chemical and Physical Properties.*—Collagen—Hygroscopic—Fat—Weakening Agents—Tendency to Untwist—Effect of knotting the Gut.

*Methods of Preparation.*—Heat and Antiseptic Solutions—Heat of Germicidal Degree absolutely Certain—Discussion of Methods proposed—Pyoktanized Gut—Chromicizing—A Tanning Process: its Benefits and Objections.

*Storage.*—With Results from Experiments.

*Tests.*—With Gut knotted and unknotted—Experiments by Implantation to ascertain the Strength after Partial Absorption—Tabulations of Tests.

#### BIBLIOGRAPHY.

STRANG, M. *Geschichte der Ligature*, 8vo. Berlin, 1884. Also, *RECENS.*, J. Phila. Med. Times, 1874, vol. iv. p. 708.

FERRIERE, F. (Historical). *St. Louis Clin. Rec.*, 1879, 1880, vol. vi.

LISTER. *Tr. Clin. Soc. London*, 1881, vol. xiv. pp. 43–63. *Lancet*, Lond., 1881, vol. i. p. 201.

BRAATZ, BRUNNER. *Bruns, Beiträge zur Klinische Chirurgie*, 1891.

REVERDIN. *Revue de la Suisse Romande*, 1888.

ZWEIFEL. *Centralblatt für Gynäk.*, Leipsic, 1879, Bd. iii. S. 295.

KOCHER. *Centralblatt für Chir.*, Leipsic, 1881, Bd. viii.

HUNTER ROBB. *Amer. Journ. Obstetrics*, vol. xxiv., No. 6, 1892.

KLEMM. *Archiv für Klinische Chirurgie*, Bd. xli.

MIKULICZ. *Klinische Jahrbuch von Gütstadt*, 1889.

DODERLEIN, A. *München. Med. Wochen.*, 1890, Bd. xxxvii. S. 57–61.

GOODELL, W. *THERAPEUTIC GAZETTE*, Detroit, 1892, Third Series, vol. viii. pp. 6–9.

FOWLER, G. R. *New York Med. Rec.*, 1890, vol. xxxviii. p. 177.

KYLE, D. B. *THERAPEUTIC GAZETTE*, Detroit, 1892, Third Series, vol. viii. p. 305.

FLUGGE. *Zeitschrift für Hygiene*, Bd. iv., 1888.

NEISSER. *Inaug. Dissert.*, Leipsic, 1889.

SENGER. *Berliner Klinik*, Heft vi., 1888.

GÄRTNER. *Verhandlungen der Deutsche Gesellschaft für Chirurgie*, 1887.

KAMMEYER. *Inaug. Dissert.*, Berlin, 1889.

GEPPERT. *Berliner Klinische Wochenschrift*, Heft xxxi., 1889.

KOCHER. *Correspondenz blatt für Schweizer Aerzte* 1888.

#### POSSIBLE RELATIONSHIP BETWEEN THE TUBERCULAR DIATHESIS AND NITROGENOUS METABOLISM.

VERBAL COMMUNICATION MADE TO THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, NOVEMBER 6, 1894.

BY SAMUEL G. DIXON, M.D.,

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THE present seems to be an auspicious time to review the work that has been already done looking towards the securing of immunity from, and the cure of, tuberculosis, and to suggest the lines along which further success in the quest will be most probable. The task may seem futile to some; to others the frequent announcement of the details of our experiments may be tiresome; but so long as this dread malady or group of maladies remains the scourge of humanity that it now is, and so long as there is evident a single untried method or procedure which offers the least hope of ultimate victory, I feel that there should be no cessation of our efforts, and that periodical reports should be made in order that other co-workers may be aided, and in the hope that the ensuing inquiries and discussions may possibly clear up obscure points or indicate new lines of research.

Therefore I may be pardoned if I briefly review once again the results of my work thus far and the suggestions I have made, especially as they lead up to the announcement of a series of new suggestions, the consideration of which, it seems to me, must be very important in the further pursuit and investigation of this great subject.

When, in the *Medical News* of October 19, 1889, antedating by nine months the discovery of tuberculin by Professor Koch, I reported that I had found a changed form of the tubercle-bacillus, and that I had been able to render certain animals insusceptible, for a time at least, to the dread disease, I believed and still do believe that these discoveries, since happily corroborated by others, were of special importance. For, since that which has been accomplished once can be done again, if I really had produced immunity, though but in the slightest degree, there must be underlying my work a germ or essence of truth which, when once revealed, would make the repetition of that result upon the human being obtainable at will. And, as the bacilli had altered in form without human interference, it was evident that they themselves were in some way able to change the condi-

tions of their environment or to produce something therein or within themselves that was hostile to their normal growth and development.

In this connection I would like to state that, whether the credit be ultimately given to Professor Koch or myself, I feel that the discovery of the active principle of tuberculin was most important, for, though I have not as yet felt justified in using it in experimentation upon human beings, and will not until we have more positive knowledge concerning its precise action upon the economy, it has some value for diagnostic purposes, and also has, by its peculiar action upon tubercular tissues, opened the way to a new field of investigation and discussion.

In the course of my attempts to discover the nature of the active principle of the so-called "tuberculin," I produced from the cultures of the bacilli, including their nidus, a substance that strongly suggested a relationship to the amide group of metabolic products,—viz., glycocin, creatin, creatinin, taurin, tyrosin, uric acid, urea, etc. Realizing that the systems of animals suffering from wasting diseases and with defective excretory organs were in an abnormal condition as regards these products of metabolism, I began at once, with the kindly assistance of Professor W. L. Zuill, M.D., D.V.S., a series of physio-pathological experiments, injecting hypodermically certain members of this amide group, such as urea, creatin, taurin, etc., into both healthy and tuberculous animals.\* The results from this line of clinical experiments by Zuill, reported by the professor and myself in the *Times and Register* of September 26 and October 17, 1891, are remarkable, to say the least, inasmuch as they so closely correspond in many respects to the results from similar experiments with tuberculin. Moreover, I have used similar injections of certain members of this group in the treatment of a marked case of lupus, with a result of very decided improvement and apparently of practical cure, it being now several months since the patient was discharged, and there being no report as yet of any relapse.† Since these experiments were inaugurated by me a substance—thiosinamin—closely similar to urea in formula has also been used abroad with apparent success in the treatment of lupus.

More recently, Professor Vaughan and Dr. McClintock, of the University of Michigan, have shown that certain nucleins are germicidal,

and that there is one of these germicidal nucleins in the serum of the blood.‡ Professor Vaughan has, further, been able to produce by means of yeast nuclein a temporary immunity, at least, to tuberculosis in certain animals, to retard the progress of the disease, and to decrease the virulence of the germ.§ Moreover, hypodermic injections of 40 drops of a two-per-cent. solution of yeast nuclein invariably produced a rise of temperature of from two to four degrees in a patient who had a local tuberculosis.

As to the nature of nucleins, Vaughan states that they are "the chief chemical constituents of the living parts of cells," "the chemical basis of the nucleus of the cell;" "that these nucleins are complex, proteid bodies, consisting of nucleinic acid (which contains a high percentage of phosphorus), in combination with highly complex basic substances; that the nucleinic acid of all nucleins is probably constant, but that the basic substance differs in the respective nucleins;" that these "basic substances yield as decomposition products one or more of the so-called xanthin bodies,—adenin, guanin, sarkin, and xanthin;" and, finally, that the nucleins are "insoluble in dilute acids, soluble in dilute alkalies, and that they resist peptic digestion, by which means they may be separated from most other proteid bodies."

Now, there must be apparent to every one the close relationship existing between the amide group of metabolic products to which I have referred and the nucleins, and possibly tuberculin, especially as we may infer from Vaughan's statements that the active principle of the tubercle-bacillus cell (tuberculin?) is a nuclein, as the nuclein bases yield xanthin bodies which are closely related to uric acid and the above-mentioned amide group,|| and as "Horbaczewski has ascertained that uric acid is produced from the nuclein of spleen pulp, which contains the antecedent or mother substance of uric acid, this mother substance yielding not only uric acid, but the other xanthin substances."¶ Is it any wonder that the clinical results from the introduction of these bodies into tuberculous subjects are so remarkably similar in character?

The question that naturally first arises in the

‡ *Medical News*, December 23, 1893.

§ Annual address to Section 1, Illinois State Medical Society, 1894.

|| Kirke's "Hand-Book of Physiology;" Waller's "Human Physiology."

¶ Professor Vaughan's address, *loc. cit.*

\* "Proceedings of Academy of Natural Sciences," November 18, 1890.

† *Ibid.*, February 21, 1893.



mind of the investigator is, What is the real nature of tubercular inflammation and of the peculiar action or reaction of the above substances upon tubercular tissues and tuberculous subjects?

I have already stated that I believed that where the lithæmic and tubercular diatheses or conditions were present at the same time in any individual, it was an exception to the rule, and have suggested that it might possibly be advisable to endeavor to produce, by hypodermic injections of certain members of this amide group of metabolic products or otherwise, a temporary condition of gout or lithæmia in our tuberculous subjects, hoping thereby to possibly supply that in which the pathological tissues are deficient or to alter the inflammatory condition of the tissues either in kind or degree,—to change the soil, as it were,—so that either the hostile pathogen could no longer find in those tissues a suitable nidus, habitat, or environment, or that the vital activities and resisting agencies of the body would be increased and strengthened sufficiently to overcome the disease germ before it could multiply and produce its harmful effects in the body.\*

To strengthen this suggestion, I need only remind you that the lithæmic condition is one assumed by general consent to be in some way due to or connected with excessive assimilation and metabolism of proteid substances, together with increased oxygenation; while the tuberculous diathesis is manifestly one dependent upon deficient proteid assimilation and decreased oxygenation. Are we not all familiar with the fact that those predisposed to tuberculosis generally resist the disease as long as they can maintain growth or while their metabolic activities furnish *more* than enough pabulum for mere sustenance, and that as soon as that excess of assimilation ceases, tuberculosis develops and eventually overcomes the subject?

I would also like to call your attention to the fact that, so far as I know, no one has attempted to explain the cause or rationale of the noted reactions of tuberculin, nucleins, and the members of the amide group mentioned upon tubercular tissues and tuberculous subjects; but that there is some rational and reasonable connection between these reactions and the facts of the foregoing statements must be patent to

every one. If not, these additional remarks concerning the experiments of Horbaczewski, which I quote from Professor Vaughan's article, may serve to emphasize the argument.

"The mother substance from spleen nuclein yields not only uric acid, but the other xanthin substances, as xanthin, sarkin, guanin, and adenin. Uric acid is formed when the antecedent or mother substance is split up in the presence of an oxidizing agent, while the other substances result when the process is carried out in the absence of such agents. This is in complete harmony with the facts which have been ascertained by the conversion of one of these xanthin bodies into other members of the same group. Certain other nucleins as well as that of the spleen serve as antecedents to uric acid. This discovery makes clear a hitherto most perplexing problem which has concerned the chemist, the physiologist, and the clinician. In short, it explains the origin of uric acid in the mammalian body. The chemist had taught us to look upon uric acid as the result of imperfect oxidation, the completed product of which is urea; but the physiologist has been unable to demonstrate this supposed relationship between urea and uric acid. The experiments of Horbaczewski show that the amount of uric acid and other xanthin bodies formed is a measure of nuclein metabolism; in other words, it indicates the number of cells which are suffering disintegration processes. Normally, the white blood-corpuscles constitute the most important and probably the most numerous nucleated cells daily undergoing destructive changes. Therefore any condition which induces an abnormal leucocytosis increases the amount of uric acid. In infants the number of nucleated cells is proportionately larger than in adults and the amount of uric acid formed is correspondingly larger. In the fasting state the white blood-corpuscles are reduced and the uric acid is also diminished. Meat diet increases the number of white corpuscles and consequently the formation of uric acid. Quinine and atropine diminish the number of these corpuscles, and by so doing lessen the amount of uric acid formed; while pilocarpine, antifebrin, and antipyrin have been found to increase both. The increased formation of uric acid and xanthin in leukæmia, phosphorus-poisoning, acute febrile diseases, especially pneumonia, cirrhosis of the liver, and pernicious anæmia now finds an explanation."

I might go further and show how glycosin, leucin, tyrosin, urea, etc., are closely related to the fatty acid series, the amidogen radicle

\* *Medical and Surgical Reporter*, September 6, 1890; "Proceedings of Academy of Natural Sciences," November 18, 1890, and February 21, 1893; *Medical Bulletin*, May, 1893.

NH<sub>2</sub>, taking the place of H in a hydrocarbon radicle, or a hydrocarbon radicle replacing H in the amidogen radicle,\* at the same time recalling to your attention the fact that the abundant administration of fat is essential in the treatment of tuberculosis, and that I have secured some apparently good results by the injection of glycerin, which not only readily combines with the various fatty acids to form fats, but has a decided influence upon the metabolic activity of the liver. Or I might mention that recent investigations seem to indicate that the efficacy of cod-liver oil as a reconstructive in these wasting diseases largely, if not altogether, depends upon its contained alkaloids, three of which have a direct connection with urea in construction and formula, and the others evidently being closely related to a combination of the amidogen with the glycerin radicle.

However, I think that sufficient has been said to open up the very broad question as to whether the conditions that predispose to or favor the development of tuberculosis are not those of faulty, deficient, or abnormal nitrogenous metabolism, and whether the truly scientific method of obtaining immunity against this dread malady will not necessarily come through a thorough understanding of the processes involved and the changes that take place in the various cells and tissues of the body, in so far as they are related to the assimilation, secretion, and excretion of nitrogen and nitrogenous compounds.

Believing that this is largely so, I would, therefore, suggest that future work carried on along the following lines promises to return good results and to lead to substantial ground on which we may base our hopes of eventually securing positive immunity. Such work should include, I think,—

1. A systematic investigation as to the amount of nitrogen secreted by the healthy, the tuberculous, and the lithæmic, and the relative proportion of the various nitrogenous products in each case.

2. A tabulation of the clinical results from the systematic *hypodermic* administration of tuberculin, nucleins, and members of the amide group of metabolic products to healthy, tuberculous, and lithæmic subjects, preferably the same, if possible, as those in the first series of experiments; the results to include full reports as to temperature, secretion and excretion of nitrogen and nitrogen compounds, increase or decrease in white blood-corpuscles,

condition of subject, etc. Considerable of this work has been done, but far more is needed. Collateral experiments upon animals would also have their place here and would be of value.

3. Experimentation as to special treatment or diets as would be indicated by a study of the results of the above series of experiments.

Confident that such a work as indicated will be rich in returns to those who undertake it, and trusting that others may be induced by these remarks to join with me in carrying it out, either in general or in detail, I am sure that in whatever way immunity against tuberculosis is eventually secured, it will be, in very truth, a blessing to humanity whose magnitude is almost inconceivable, and which will be measured least of all by the undying fame of its discoverers.

*AMPUTATION OF BOTH LEGS AT THE  
KNEE-JOINT FOR PARALYTIC CLUB-  
FOOT IN A CASE OF SPINA BIFIDA  
AND COMPLICATED BY CON-  
GENITAL INGUINAL  
HERNIA,*

IN WHICH THE TESTIS AND APPENDIX VERMIFORMIS WERE REMOVED DURING  
AN OPERATION FOR ITS  
RADICAL CURE.

READ BY TITLE AT THE MEETING OF THE AMERICAN ORTHOPÆDIC ASSOCIATION, WASHINGTON, 1894.

BY WILLIAM J. TAYLOR, M.D., PHILADELPHIA, PA.,  
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and College for Graduates in Medicine; Attending Surgeon  
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Orthopædic Hospital and Infirmary for  
Nervous Diseases.

**A**MPUTATION at the knee-joints of both lower extremities for congenital paralytic club-foot is seldom found to be necessary as an orthopædic measure, for conservative methods of treatment by means of braces and, if need be, tenotomy, with some one or more of the operations upon the tarsal bones, usually accomplish good and lasting results. Occasionally, however, the deformity is of such a character, and the resulting disability is so great, that no form of appliance or conservative operative procedure will give the desired results. Under these conditions, amputation, followed by properly fitting and accurately adjusted artificial limbs, is our only means of positively benefiting the patient, and the more radical procedure is, therefore, the one to be selected.

A detailed account of one case where this

\* Waller's "Human Physiology."

mode of treatment was carried out with the happiest results will, I trust, prove of interest.

This little patient, a boy aged six years, was admitted into the Orthopædic Hospital and Infirmary for Nervous Diseases, under the care of Dr. W. W. Keen, and it is through his kindness that I am able to make this report.

As assistant surgeon to the hospital, I have been enabled to assist Dr. Keen in the performance of all of the operative procedures here described, and much of the subsequent care and treatment has been intrusted to me.

I have nowhere been able to find recorded an instance of similar deformities, and the remarkable number of serious surgical operations which this patient has passed through in perfect safety and with comparatively little shock and suffering marks his case as unique.

His father, mother, three sisters, and one brother are all living and in good health, and there have been no other cases of deformity in the family. He is the third child born to the mother, and during pregnancy she remembers having had a severe fall, and suffered a great deal of pain during the remainder of the time she was carrying him. Labor was normal, but very painful, and the boy was born with the deformities about to be described. He has always been well, with the exception of an attack of chicken-pox and one of la grippe. All parts of the body, with the exception of the lower limbs, developed as in other children, and he began to crawl at about the average age. His mind developed as rapidly as in the case of the other children. He is a well-nourished child; all the organs are in good condition, except, however, incontinence of urine and fæces. The head, chest, and upper extremities are normally developed. The laminae and spines of two of the lumbar vertebrae are absent, and there is a small, soft tumor over this site,—a spina bifida.

He has also a complete congenital inguinal hernia on the right side.

The right hip is normal in size and shape; the right femur is normal at the hip-joint, but gradually tapers towards the lower end to a mere blunt point, with an absence of the condyles. The muscles of the thigh are poorly developed, especially towards the knee-joint. There are two bony knobs on the inner side, about the middle third of the thigh; these were thought not connected with the femur, and the skin moves freely over them. The patella is absent. The tibia is dislocated backward and upward upon the femur. It may be completely flexed, but can only be extended to a right angle. The fibula is absent, and the

muscles of the leg are much wasted. At the ankle-joint there is a dislocation backward and upward. The foot is inverted and the toes point inward. The great toe is absent. The pulse in the dorsalis pedis is easily distinguished.

The left hip-joint is normal, and the femur is normal to its lower third, where it bifurcates, and there is a knob of bone projecting down and inward. The external portion takes the course of the natural bone to form the knee-joint. The condyles are very small and the patella absent. The knee is dislocated backward and upward, and is flexed, making an angle of about sixty degrees when fully extended. There is a small fibula which turns around the tibia until it comes in front of it at the ankle, the external malleolus being in front. The foot is in extreme talipes varus, the toes pointing inward, while the sole of the foot is turned upward. The left leg is a little larger than the right, and there is slight motion in the left knee-joint. The ankle-joints have no motion on either side, while the motion at the hips is almost perfect. Sensation in both limbs is good, and the electrical conditions of the muscles are normal. (See Fig. 1.)

His manner of moving from place to place is to sit upright upon the floor with all parts of the lower extremities flexed. He then leans his body forward and places his hands upon the floor as far as he can reach, and brings his body up to his hands. In fact, he swings his body, using his arms as one would a pair of crutches.

As his legs and feet were perfectly useless appendages, with no possible hope of their ever becoming serviceable, either with the aid of appliances or by operative measures, it was decided, after very careful consultation, to remove them by amputation and apply in their stead accurately fitting artificial limbs.

It was at first thought that amputation in the middle of the legs would be best, as being the most favorable point for the fitting of artificial limbs; the internal knob of bone, or bifurcation of the femur, and the pieces of bone on the right thigh to be removed at the same time, as they would interfere with the adjustment of the artificial limbs. It was deemed best to operate in instalments, and to permit the patient to recover thoroughly from one operation before attempting another. Accordingly, the first operation was performed January 4, 1893. An incision was made over the knob of bone which projected from the inner side of the left femur, and the skin and fascia dissected off. This was found to be a

pear-shaped piece of bone, projecting from the femur about three inches above the knee, on the inner side, and united to it by bony union. This projection of bone was three and one-eighth inches long by one and one-sixteenth inches in diameter. The portion which was attached to the femur was about three-quarters of an inch in diameter and narrowed to form a neck; a small bursa covered the tip of this prominence. This was removed by sawing through the neck and smoothing the ends with cutting forceps. The artery passed behind this knob of bone and was exposed in the incision, but was not wounded. In view of the character of the tissues, it was found impossible to amputate through the leg as at first proposed. An incision was therefore made over what would ordinarily be the external condyle of the femur, down and around the front of the tibia and up to the inner condyle. This flap was dissected back, the tibia disarticulated at the knee, and a smaller posterior flap cut from the skin. The wound was dressed with sterilized gauze, while a small piece of gauze was introduced between the lips of the wound, for drainage. This wound healed without special incident other than a considerable discharge of serum, which came apparently from a portion of the synovial membrane of the bursa which had not been thoroughly removed at the time of operation.

On March 3, 1893, the stump of the left leg having thoroughly healed and being in perfectly healthy condition, the right leg was amputated at the knee-joint by a similar incision to that used at the former operation. Two knobs of bone about three-quarters of an inch in diameter were found on the inner and middle third of the thigh. The incision was enlarged from its inner angle, and these projections of bone removed by a chisel and rongeur forceps. They were found to be connected with the femur by ligamentous attachments only, and the abductor magnus muscle was attached to them. They were removed with great difficulty, and in so doing the deep femoral artery was cut, as it lay immediately in contact with them. This was, however, easily ligated, and the amount of blood lost was small. A drainage-tube was inserted, and the wound closed and dressed with aseptic gauze. He made a perfect recovery, with no ill effects whatever, from these two severe operations.

It was found impossible to reduce completely the hernia and to apply any sort of truss which did not give pain by its pressure. As artificial limbs were to be worn, a further appliance in

the shape of a truss encircling the waist was not to be thought of. Therefore, on May 24, 1893, after thorough preparation of the parts, Dr. Keen operated upon the hernia, his intention being to use Halsted's modification of Bassini's method. An incision was made four inches long, parallel to and three inches above Poupart's ligament, and the sac opened. Several organs were found in the sac,—the appendix vermiformis, bowel, testicle, and cord. The appendix was three and one-eighth inches long. It was ligated with silk and the lumen of the stump disinfected with pure carbolic acid. The stump was then invaginated and covered by bringing the serous surfaces of the bowel together over it. The testicle was then removed, as it was much atrophied and adherent to the sac, and the sac torn loose and sewed together, the excess of the sac having first been cut off. The appendix, when removed, was much longer than normal, and was attached at its tip to the wall of the hernial sac. When examining it after its removal, a small piece of tough vegetable material was squeezed out of its interior. This appeared to be a small bit of apple skin, but there were no evidences of inflammatory mischief to its lining mucous membrane. The pillars of the ring were sutured, and, lastly, the skin. A gauze and iodoform collodion dressing, thoroughly sealing the wound, was applied, with an ample covering of gauze dressing. An inverted Y-shaped splint was then applied to the spine, extending downward; to this both thighs were firmly bandaged, to prevent all movement and enable the wound in the loin to close by primary union. From this operation also he recovered without a bad symptom. There was very little shock, from which he rapidly reacted, and his convalescence has been perfect.

From all of these serious and necessarily prolonged operations his rapid recovery was truly remarkable. At no time was his condition such as to cause any alarm, and his temperature chart showed a most gratifying absence of fever. He was perfectly calm and cool throughout, never crying when taken to the operating-room, or manifesting that fear so common to all children, as, indeed, to most adults.

On July 13, 1893, artificial legs were fitted, and by July 25, by a little careful adjustment, he was able to walk around the ward by the aid of a chair which he pushed in front of him, and in a short time with the aid of crutches, and then a cane.

He can now walk alone and without the aid

**FIG. 1.**

Showing the deformity before operation, Patient lying upon his back in bed, as it was impossible to extend the legs further than a right angle.

**FIG. 2.**

The legs and feet after their removal.

FIG. 3.

Appearance of the stumps after complete recovery from the amputation, and the scars made in the removal of the projections of bone. It also shows very accurately the hernia.

FIG. 4.

The artificial legs applied.

FIG. 5.

1. Testis. 2. Appendix vermiformis. 3, 4. Bony spines from right femur. 5. Bony spine from left femur.

of crutch or cane, although as a measure of precaution, in moving about upon our polished floors in the hospital, he uses one crutch for security.

These cuts are from photographs taken in part by me and in part by Dr. Boyer, the resident surgeon.

Fig. 1 was taken while he was lying upon his back in bed, as it was impossible to extend the legs farther than a right angle.

Fig. 2 shows the condition of the legs and feet after their removal.

Fig. 3 shows the condition of the stumps after complete recovery from the amputations, with the scars made in the removal of the projections of bones. It also shows very accurately the hernia.

Fig. 4 shows the application of the artificial limbs, which were only made after the most careful and painstaking adjustment by Mr. Osborne, their maker. As will be seen, it was necessary to bring the knee-joint much farther forward than is usual, to compensate for the want of complete control of some of the muscles of the thigh and to enable him to balance perfectly. Elastic running down the shin-bones (?) was necessary to provide sufficient resistance to permit of the extension of the legs in walking.

Fig. 5 shows the three bony projections removed, as well as the atrophied testicle and the enlarged and thickened appendix vermiformis.

#### THE INFLUENCE OF ATROPINE UPON RESPIRATORY VOLUME.

DR. ALFRED LEVISON (*Berliner Klinische Wochenschrift*, September 24, 1894) declares that the effect of atropine upon respiration is to make it hurried, to increase its size, and to make it spasmodic. Morphine opposes this action. He quotes at some length and with approval the paper by Wood and Cerna on morphine and chloral as respiratory depressants, and atropine, strychnine, and cocaine as respiratory stimulants. Three points, he thinks, need further study:

1. How is the respiratory volume affected when small doses of atropine are brought directly in contact with the respiratory centre?

2. How is the respiration affected when morphine and atropine pass simultaneously into the blood?

3. How is the respiratory volume affected after the administration of atropine when the vagi are cut?

Vollmer has already referred to the first point, and Levison has confirmed his results by injecting atropine into the carotid. There was a marked and immediate increase of the respiratory volume depressed by morphine. This increase was not maintained at its greatest height, but remained always and for the most part considerably above the point at which it was when the atropine was administered. A primary fall, such as is observed when atropine is injected under the skin, was never observed; hence it is assumed that such a fall is due to an action upon the peripheral endings of the vagus in the lungs,—a partial paralysis, which is more than compensated a few minutes subsequently by a central action.

2. Two rabbits of the same litter and about equal weight received, the one morphine alone, the other morphine and atropine. The stronger rabbit received .02 morphine, the weaker .02 morphine and .04 atropine in a vein; proportionately, therefore, more morphine than atropine. In one and a half hours the respiratory volume in the animal which received only morphine had reached only a third of the initial, whereas in the other animal, which received morphine and atropine, the initial number was already reached. Therefore there is here again a clear proof of the antagonism of both alkaloids, when atropine is not given in absolutely poisonous dose.

3. After section of one vagus, the respiratory volume depressed by morphine was raised, but depressed after section of the other vagus. If now, as in both the first experiments, the atropine be injected into a vein, spasmodic respiration, from the intense irritation of the atropine upon the respiratory centre, appears, and the respiratory volume sinks for a moment, but quickly rises again.

Levison maintains:

1. There results from experiments on animals the possibility that atropine in moderate doses is of value in morphine-poisoning in men, the respiration being raised in frequency.

2. This rise is the result of an irritation of the central organ in the brain.

3. The improvement of the heart's activity through atropine is likewise of therapeutic significance.

4. The exciting action even of moderate doses of atropine can easily become paralyzing if it passes directly into the blood.

Levison concludes his paper by referring to reported cases in which atropine had been of service in opium-poisoning.

# The Therapeutic Gazette

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## Leading Articles.

### THE TREATMENT OF APPENDICITIS.

AT a recent meeting of the College of Physi-  
cians of Philadelphia, Dr. John B. Deaver  
read a paper upon "The Treatment of Appen-  
dicitis," in which he reported a large number  
of operations with a great number of recov-  
eries.

In the discussion which followed, and which  
was opened by Dr. McBurney, of New York,  
views were expressed which cannot fail to have  
an influence in the treatment of this disease  
hereafter.

Dr. Deaver took the rather advanced stand  
that practically every case of prolonged acute  
pain in the right iliac fossa was appendicular  
in origin, indicated the presence of an appen-  
dicitis more or less acute, and that the presence  
of appendicitis indicated an operation: first,  
because, if operated upon very early, the mor-  
tality is almost *nil*; second, because, if opera-  
tion is deferred, it becomes more difficult after

several attacks, and for this reason and because  
attacks generally increase in severity, the dan-  
ger to the patient's life is enhanced. In the  
early stages of the inflammation the operation  
may be resorted to, or, if the symptoms are  
not pressing, it is preferable to wait until the  
acute symptoms have subsided and then to  
operate before another attack is superimposed  
upon the first.

Dr. Deaver also advised the administration  
of a saline purgative or castor oil in full dose  
to all cases of appendicitis, with the double  
object of removing from the bowel indigestible  
food which may be producing the pain, or, if  
operation is required, emptying the bowel of  
fecal matter.

In the discussion which followed, Dr. McBur-  
ney emphasized very strongly the fact, in his  
opinion, that medical treatment of these cases  
is always and invariably futile, and that in  
many instances an attempt at such treatment  
places the surgeon eventually at a distinct dis-  
advantage, because of the ravages which have  
been produced by the disease before he has  
had an opportunity to operate. He disagreed,  
however, with Dr. Deaver as to the advisabil-  
ity of administering purgatives, as he did not  
believe that the pains of indigestion were diffi-  
cult of separation from the pains of appen-  
dicitis, and did not regard the emptying of the  
bowel, except in extraordinary cases, as a  
necessary preliminary measure to operation.  
He asserted most emphatically that the appen-  
dix was the source of septic infection from the  
very beginning of appendicular inflammation;  
that it provided a fertile field for growth of  
those micro-organisms which, while benign in  
the healthy intestine, speedily become malig-  
nant when, by reason of pathological changes,  
their growth is more active. He expressed the  
belief that the septicæmia arising from this  
local point of infection varied in different in-  
dividuals, according to their power of septic  
resistance, just as one man resists the septic in-  
fection of a severe post-mortem wound and an-  
other dies of a pin-prick while making an  
autopsy. For these reasons he strongly urged  
operation upon every appendix which seemed  
to be in trouble, and, because of his belief in  
its being a source of infection, urged its re-  
moval as early as possible before the general  
system had become infected. Later in his re-  
marks he admitted that he preferred in the ma-  
jority of cases to wait twenty-four to forty-eight  
hours until the acute symptoms had passed by  
before operating, as the results were usually  
better under these circumstances, though,  
should symptoms become fulminating during



this period, operation should not be delayed. After reiterating again and again that all medicinal means were wretched makeshifts in cases of appendicitis, and challenging any medical man present to offer a plan of treatment which could be shown to have any distinctly favorable influence upon the disease, he ceased speaking.

He was followed by Dr. William Osler, of Baltimore, who, as a medical clinician, took the ground that too many appendices were removed and that the operation for appendicitis was passing through the excessive stages which operations upon the tubes and ovaries passed through a few years since. He believes that, while many cases do require operation, many are unnecessarily operated on, and recalled the results of a large number of "post-mortems" made by him in which persons died of other diseases than appendicitis, but in whom evidences of appendicitis having previously existed were present, proving that acute appendicitis could occur with entire cure, without operative interference.

Dr. Hare inquired of Dr. Deaver whether there was not danger in administering active purgatives to patients in whom a perforated appendix possibly existed, on the ground that through this perforation fecal matter might be swept out into the abdominal cavity, and he quoted a paper of Dr. McBurney's, in which that gentleman had asserted that in all his operations he had never found fecal matter in the *caput coli*, and that for this reason the administration of a purgative was not needed.

Dr. John Ashhurst then took the ground that Dr. Deaver and Dr. McBurney were far too advanced in their views in regard to operations for appendicitis. He quoted a number of cases in which he had seen active medicinal measures produce cures, and he protested in the name of conservative surgery against the extreme views entertained by the first two speakers, stating that, in his experience, the application of ice over the right iliac fossa and the administration of opium until the respirations dropped to 12 a minute had removed acute inflammations of the appendix in a large proportion of cases. He did not for a moment deny that operation was often needed, but he did assert that it was by no means indicated as a measure of first resort in every case.

Dr. A. V. Meigs, in his remarks, practically agreed with those made by Dr. Ashhurst, and while expressing his willingness to call in a surgeon as a consultant in all cases of appendicitis, declined to admit that surgical aid was necessary in all instances.

In closing the discussion, Dr. Deaver stated that he had seen instances in which the administration of purgatives in cases of perforated appendices had resulted in the escape of fecal matter into the peritoneal cavity.

As a result of this and other interesting discussions upon this most important topic, we think that fairly definite ideas as to what the general practitioner should do in such cases have been obtained.

In the first place, in many instances he will relieve himself of some responsibility if, from an early stage of the disease, he call to his aid in diagnosis a surgical consultant, who will be called in not to operate, but to watch the case from a surgical stand-point, to determine at its various stages whether an operation is necessary. A surgeon should be chosen who is neither ultra-radical nor ultra-conservative, who will neither urge operation too soon nor postpone it too late; and he should be a man who, while skilled in surgery, has enough regard for the opinion of the medical clinician to permit his own judgment to be influenced by medical opinions, should good reasons be adduced why an operation should not be done, for it is evident that we are rapidly approaching a time when the operation for appendicitis will not be so frequently performed by those who are now reaping a harvest of appendices.

It is also evident that cases of appendicitis may be divided into three classes: those which are fulminating or gangrenous from the moment of their invasion, and which in the majority of the cases are fatal—whether operated upon or not; second, those in which medicinal measures or measures applicable by a medical man, such as the application of cold and leeches and opium, are to be tried, and, these failing, operation resorted to soon or late, according to the rapidity of development of the attack; and, third, those cases of appendicitis which, with perfect safety and with entire cure, may remain untouched by the knife, and in which purely medical measures bring about the results desired.

While an attack of appendicitis may predispose a patient to subsequent attacks, operations to avoid attacks cannot be considered as advisable, since they simply deal with the possibilities and not certainties of the future, and it is only after a man has had one severe or several rapidly succeeding attacks of appendicitis that an operation should be resorted to during the period of quiescence as a prophylactic measure.

An interesting part of the discussion was the statement by Dr. S. Weir Mitchell that in some

cases of appendicitis post-operative neuroses or other nervous complications sometimes occur, and that he knew of a case, or cases, in which, following operation, the pain and discomfort in the abdomen were so excessive as to incapacitate the patient from all employment and to render the remedy worse than the disease.

Dr. Deaver also called attention to the fact that the removal of a chronically diseased appendix relieved chronic intestinal dyspepsia and diarrhoea in many cases, a fact first insisted upon by Dr. J. H. Musser, of Philadelphia.

#### OPERATION FOR CURE OF CARCINOMA OF THE BREAST.

**T**HIS subject, always a live one from the frequency with which the disease is encountered and from its almost uniform fatality, whether operation be performed or not, has again been revived by Halsted ("Johns Hopkins Hospital Reports," vol. iv., No. 6), who claims as the result of more thorough operation, than is generally performed, results so very much better than those usually obtained that his paper merits most careful attention.

Of forty-five cases in which full details of the post-operative course were obtainable, there was local recurrence in three, regional recurrence in eight more. By local recurrence is meant a return of the disease in an apparent or buried scar. Billroth, by regional recurrence, designated a return of the cancer in or about a scar after a long time, explaining these cases on the basis of the cancer diathesis.

Halsted reserves this term for skin metastases at a greater or less distance from the scar, holding that the surgeon has no guide for the so-called lenticular and apparently discrete metastases of the skin, since one may literally flay the patient's chest and side only to find some weeks or months later one or more cancer nodules in the skin of the neck, back, or abdomen. He states that these lenticular skin metastases are distinguished from local recurrences in that they are believed to have formed against the lymphatic current and to have no connection either with the original tumor or with each other. So far as local and regional recurrence is concerned, seventy-three per cent. (thirty-four) are entirely free; there has been a true local recurrence in six per cent. In all of the fifty cases the axillary glands were more or less involved. In seventeen cases the highest intracavicular glands were also infiltrated. In only seven cases was it recorded that this gland

was healthy. In at least five cases the supra-clavicular glands were also diseased.

Halsted acknowledges the service rendered to surgery by Volkmann when he showed that, even though cancer was apparently not attached to the pectoral muscle, nevertheless the malignant growth quickly penetrates to the fascia. Heidenheim claims, indeed, that when carcinomata have involved the lymphatic channels, they invariably send rootlets to the surface of the muscle, no matter what the thickness of the layer of fat between the breast and muscle may have been; the muscle itself remains healthy for a long time. Necessity for cleaning out the axilla, even when palpation through the healthy skin shows no glandular enlargement, is now pretty generally recognized, and in contrasting the results in his cases with those of others, Halsted tabulated the work of those who recognize this general principle.

Volkmann excised the pectoralis major and sometimes the minor muscles in thirty-eight of his worst cases. In thirteen of these there was neither local nor regional recurrence. In the milder cases the muscles were not removed, and in these the percentage of local recurrence was larger than in the more serious cases.

On the basis of three years' immunity after operation for radical cure, Halsted quotes the operative results in the practice of some distinguished surgeons as follows: Bergmann (Eichel), 30.2 per cent.; Billroth (V. Winnivarter), 4.7 per cent.; Fisher (Henry), 9 per cent.; Gussenbauer (Fink), 16.7 per cent.; König (Hildebrand), 22.5 per cent.; Küster (Schmidt), 21.5 per cent.; Lucke (Dietrich), 16.2 per cent.; Volkmann (Sprengel), 14 per cent.

Halsted's operative technique is as follows: An incision is made around the breast, going wide of any infiltrated skin. This incision is continued upward and outward just below the level of the clavicle to a point on the anterior surface of the shoulder corresponding to the head of the humerus. The cut is carried at once and everywhere through the fat, the skin is dissected outward and to the lower edge of the pectoralis major muscle at the position where the fat forming the superficial fascia of the chest is continuous with that of the axilla.

The costal insertions of the pectoralis major muscle are severed, and the splitting of the muscle, usually between its clavicular and costal portions, is begun, and continued to a point opposite the scalenus tubercle on the clavicle. At this point the clavicular portion of the pectoralis major muscle and the skin overlying it

are cut through hard up to the clavicle; this cut exposes the apex of the axilla. The loose tissue under the clavicular portion (the portion usually left behind) of the pectoralis major is carefully dissected from this muscle as the latter is drawn upward by a broad, sharp retractor; this tissue is rich in lymphatics and is sometimes infiltrated with cancer,—an important fact.

The splitting of the muscle is continued out to the humerus, and the part of the muscle to be removed is now cut through close to its humeral attachment. The whole mass—skin, breast, areolar tissue, and fat circumscribed by the original skin incision—is raised up with some force, to put the submuscular fascia on the stretch, so that it is stripped from the thorax close to the ribs and pectoralis minor muscle. It is well to include the delicate sheath of the minor muscle when this is practicable. The lower outer border of the minor muscle having been passed and clearly exposed, this muscle is divided at right angles to its fibres and at a point a little below its middle. The tissue—more or less rich in lymphatics and often cancerous—over the minor muscle near its coracoid insertion is divided as far out as possible and then reflected inward, in order to liberate or prepare for the reflection upward of this part of the minor muscle.

The upper, outer portion of the minor muscle is drawn upward with a broad, sharp retractor. This liberates the retractor, which, until now, has been holding back the clavicular portion of the pectoralis major muscle.

The small blood-vessels under the minor muscle, near its insertion, must be separated from the muscle with the greatest care. These are embedded in loose connective tissue which seems to be rich in lymphatics and contains more or less fat; this fat is often infiltrated with cancer. These blood-vessels should be dissected out very clean and immediately ligated close to the axillary vein. The ligation of these very delicate vessels should not be postponed, for the clamps occluding them might of their own weight drop off or accidentally be pulled off, or the vessels themselves might be torn away by the clamps. Furthermore, the clamps,—so many of them,—if left on the veins, would be in the way of the operator.

Having exposed the subclavian vein at the highest possible subclavicular point, the contents of the axilla are dissected away with scrupulous care, also with the sharpest possible knife. The glands and fat should not be pulled out with the fingers. The axillary vein should be stripped absolutely clean. Not a particle of

extraneous tissue should be included in the ligatures which are applied to the branches—sometimes very minute—of the axillary vessels. In liberating the vein from the tissues to be removed, it is best to push the vein away from the tissues rather than, holding the vein, to push the tissues away from it. It may not always be necessary to expose the artery, but it is well to do so. Sometimes the tissue above the large vessels is infiltrated. It is best to remove all the loose tissue above the vessels and about the axillary plexus of nerves.

Having cleaned the vessels, we may proceed more rapidly to strip the axillary contents from the inner wall of the axilla,—the lateral wall of the thorax. We must grasp the mass to be removed firmly with the left hand and pull it outward and slightly upward with sufficient force to put on the stretch the delicate fascia which still binds it to the chest. This fascia is cut away close to the ribs and serratus magnus muscle.

When we have reached the junction of the posterior and lateral walls of the axilla, or a little sooner, an assistant takes hold of the triangular flap of skin and draws it outward, to assist in spreading out the tissues which lie on the subscapularis, teres major, and latissimus dorsi muscles. The operator, having taken a different hold of the tumor, cleans from within outward the posterior wall of the axilla. Proceeding in this way, we make easy and bloodless a part of the operation which used to be troublesome and bloody. Each bleeding-point is stopped as quickly as possible with an artery forceps. The edges of the wound are approximated by a buried purse-string suture of silk. The triangular flap of skin is used as a lining for the fornix of the axilla; hence the apex of this flap is shifted to a new and lower position. The axilla is never drained and invariably heals by first intention. The uncovered wound often heals by the so-called organization of the blood-clot.

As to the possible disability produced by the operation, it is in most cases so slight as to be absolutely inappreciable. In the majority the arm of the side operated upon has been quite as useful as before the operation.

A study of Halsted's tables shows that of the forty-five cases in which the results as to local recurrence are known, in ten but six months or less have passed since operation. Of the thirty-five remaining cases, there was local or regional recurrence in eleven; also, it must be noted that the period of three years or over without local recurrence has been passed by but four. In one of these, knowledge as to

local or general recurrence was not obtainable. Considering these points, it is still evident that Halsted's results are very much better than any heretofore published. It is true, as he states, that many surgeons of large experience have never seen a cancer of the breast cured. It is also true that the operation as performed by the majority of surgeons in this country offers absolutely no hope of permanent cure and but little chance of non-recurrence *in loco*.

Aside from the figures he gives, the operation he proposes is from theoretical grounds clearly indicated. The tabulation of his cases proves the practical working of this procedure. It is probable that, even with an operation as thorough as that of Halsted's, the ultimate mortality of cancer will still be large, since, before the patients present themselves, the disease will often extend far beyond the reach of his knife; yet, if we can hope for a cure in even twenty per cent. of the cases, this represents an enormous advance in our surgical attainment.

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## Reports on Therapeutic Progress.

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### GERMAIN SÉE ON FERRATIN.

The distinguished French savant, PROFESSOR GERMAIN SÉE, reported his views on the therapeutic value and place of ferratin to the Academy of Medicine of Paris, August 21, 1894.

Professor Germain Sée said that he had found occasion during his attendance at the Hôtel-Dieu to employ ferratin and to study its effects on various clinical cases, which he took pleasure in reporting. Ferratin seemed to have a direct significance in the nutrition of the tissues, and even after prolonged use it produced no derangement of the stomach or intestines. It had a pronounced curative effect. Its action was mildly astringent, without causing hurtful excitement or constipation, disturbances commonly following the use of ordinary ferruginous preparations; but, as a remarkable fact, it caused a strong increase of appetite—always precarious and capricious in anæmic patients—and also regulated the movements to a normal condition. Its administration was free from any unpleasant side- or after-effects.

Ferratin, .5 to 1.5 grammes per day in divided doses, was primarily a valuable food-product; it excited appetite and thereby offered a powerful adjuvant in permitting the absorption of food, and it contained a fixed

proportion of iron which was highly assimilable, and thus replaced a vital insufficiency.

The administration of ferratin, said Professor Germain Sée, was indicated in those suffering from anæmia from hard work, though the patients have the appearance of good health; those of both sexes affected with chlorosis; those weakened by too rapid growth and puberty; those fatigued by study; and, in short, all in whom a diminution of red blood-corpuscles had ensued, due no matter to what causes.

Professor Germain Sée concluded his report by promising that he would keep the Academy informed as to his further studies of ferratin, which he was conducting simultaneously at the Hôtel-Dieu, in his medical clinic, and in his physiological laboratory.—*American Therapist*.

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### POTASSIUM NITRATE IN THE TREATMENT OF PHLEGMASIA ALBA DOLENS.

HOVNANIAN describes his use of nitrate of potassium in this affection in the *Medical News* of July 28, 1894.

It has fallen to his lot to treat three well-marked cases of phlegmasia alba dolens with potassium nitrate with such gratifying results as to seem to justify publication.

Mrs. H., twenty-three years old, was delivered of her first child by her family physician with instruments, and sustained extensive lacerations of the cervix uteri and perineum, which at the time were not repaired, but were left for a secondary operation. Twelve days after delivery she complained of pain and heaviness in the left leg, and within three days there developed well-marked phlegmasia. On the fourth day of this complication the writer saw the patient in great agony, with a temperature of 105.2° F., a pulse of 130, and respirations 25. The limb was so turgid and swollen that there seemed to be great danger of gangrene or rupture. The woman was at once given morphine sulphate ( $\frac{1}{3}$  grain) hypodermically, and her limb was wrapped with cotton and placed on a feather pillow at a very obtuse angle. Hovnanian then prescribed a solution of potassium nitrate in water, representing 5-grain doses, to be given every hour until his return. Seven hours later he found his patient in better condition, with a temperature of 103° F., a pulse of 112, and respirations 22, and with less pain and discomfort. The swelling seemed to be less tense and the veins less engorged. The nitrate was continued as before until morning, when he found her in yet better condition. She had slept well during the night, although

she had been wakened regularly for her medicine. Her temperature was 100° F., her pulse 95, her respirations 20. The swelling was reduced to less than half, and the returning circulation was fairly well established. There was no pain whatever and but slight tenderness on pressure. The medicine was continued every two hours during the day, until the author saw her late in the evening, with a temperature of 99° F., a pulse of 90, and respirations 18. The swelling had almost entirely gone and everything was in good condition. The nitrate was continued for two days in smaller doses and at longer intervals, and then discontinued.

Two other equally typical cases are also recorded in this paper.

#### TREATMENT OF HERNIA IN CHILDREN.

The *Post-Graduate* for September, 1894, contains an article by DE GARMO, in the course of which he asserts that the knife is seldom needed in the cure of hernia in early life. There may be reasons in some cases when it is better to obtain a cure in two or three weeks by operation, rather than have the child wear a truss for one or two years. If, however, the matter is honestly placed before the parents, it will be found that in almost every instance they would prefer bringing the child regularly to the physician for a year or more until cured, to having the operation.

These are tempting cases to the over-ambitious young surgeon, as almost any operation is followed by cure.

Mechanical treatment can be begun at any time after the child is ten days or two weeks old; the earlier the better. It is an erroneous and unfortunately common idea that children will "outgrow" this defect.

There is no bandage or makeshift of any description that will take the place, either for comfort or efficiency, of a carefully applied truss containing a metallic spring.

What style of truss, of the many on the market, shall we select, for there are many good ones and many bad ones. All infant trusses should be condemned which are made to apply from the same side of the rupture; this includes all German or French styles, also all of those whose pad is placed upon a descending arm at a level lower than the pelvic spring, and all trusses cushioned or padded with soft material.

The springs should be so tempered that they may be bent to the exact shape of the child's body, and the entire truss should be imper-

vicious to moisture, that it may be frequently washed.

The more simple it is in construction the better. For the treatment of a single inguinal hernia in childhood, the spring, which from the pad crosses the front of the abdomen, passes around the hip of the opposite side and across the back, is one of the most valuable appliances that can be used; it can be found in almost every drug-store in the land. Covered either with hard rubber or celluloid, it is known in the trade as a "cross-body" truss. The celluloid have the advantage of being readily shaped without heating the spring, but are not as durable as those covered with rubber; both are excellent trusses.

The author uses in his private practice and clinic a German-silver spring made on the "Hood" pattern, which has given him great satisfaction. A similar truss has been made with celluloid covering and is known to the trade as the celluloid Hood truss.

The measure for selecting the size of the truss should begin just above where the hernia is seen,—i.e., over the internal ring,—and pass around the hips midway between the crest of the ilium and the trochanter major, to point of starting, giving the circumference in number of inches.

The method of taking the shape by means of a strip of sheet-lead, as taught by the writer for many years, is a great aid. It consists of securing a tracing on paper of the exact shape of the hips at the point covered by the truss-spring. A piece of sheet-lead one-sixteenth of an inch thick, about half an inch wide, and long enough to go at least two-thirds around the child, is used for this purpose. Place one end of the lead over the inguinal canal, with the strip resting across the abdomen. Mould the lead to the shape of the abdomen and pass it around the hip opposite to the hernia and across the back. Press the lead to the exact shape of the hip and back, and then slip it off, place on a sheet of paper, and make a tracing of its inner surface with a pencil. The shape of the other hip may be taken in the same way, giving an approximately correct diagram of the pelvis. In shaping the spring, this diagram is used instead of the child. If a spring covered with hard rubber is used, it should be passed through the flame of a spirit-lamp until it is quite warm, and it can then be bent to the exact shape required.

In locating the truss-pad, see that its lower edge does not come below the external ring; its pressure should be well over the internal ring.

## LOCAL ANÆSTHESIA.

This subject is one especially interesting to the practitioner who does any minor surgery, and who does not? It is written of by CARR in the *Virginia Medical Monthly* for August, 1894. He says that in the gum or mouth  $\frac{1}{4}$  grain of cocaine is a perfectly safe dose given hypodermically, and it may be repeated safely in ten minutes if no disagreeable symptoms appear. In the neck, face, and scalp  $\frac{1}{2}$  grain may be given as a safe dose, and in the trunk and extremities 1 grain. In these doses no unpleasant effects will be observed unless the patient is very susceptible, and even in the extremely susceptible there will be no danger. If there is any suspicion of the existence of marked idiosyncrasy, and the operation can be put off for a few days, it is a good plan to try the effect of the drug in gradually increasing doses by the mouth. A tolerance for it can in this way be rapidly established.

Whenever the anatomy of the part will permit, a rubber band or ligature should be applied above the seat of operation. This will prevent absorption, and the dose may be largely increased without danger. In operations upon the extremities this can always be done, and 2 grains can be given with safety and to the average individual without unpleasant effect.

The author has given in this way  $4\frac{1}{2}$  grains for the synchronous amputation of three toes, with no effect except some mental exhilaration and talkativeness. He gives no rule as to the safe dose in small children. He has never had occasion to use it hypodermically in any patient under eight years of age.

The following rules should be observed:

1. Keep the syringe in good working order, clean and aseptic. Use a small, sharp needle and boiled water.

2. Use a four- to eight-per-cent. solution.

3. Disinfect the part with a sublimate solution (1 to 1000 or 1 to 500) before using.

4. In making the first injection, choose the least sensitive spot central to the site of operation, or even two inches distant. Inject at first only a third or a fourth of the quantity you expect to give.

5. If possible, put a rubber ligature around the part above your injection. Make this ligature just tight enough to stop the circulation and prevent bleeding while you are operating; it need not be tight enough to cause much discomfort. This prevents constitutional symptoms and prolongs the local effects.

6. Wait until you get the effect of the first injection, which may be five minutes, or even ten or twelve minutes if it was placed deeply.

Then make all subsequent injections by passing the needle through the skin where it has lost sensation and running it along under the skin in the direction indicated.

7. Before beginning to operate, pass the needle all around and beneath the field of operation to see if all parts have been thoroughly anæsthetized. If not, inject a little more at the sensitive spots.

8. If sutures are needed, place them before removing the rubber band, but do not tie them until the band is removed and the bleeding checked. Sensibility soon returns after removing the ligature.

9. If a large dose has been used and constitutional effects are feared, put the ligature back after the operation and leave it for an hour or so. He has found that whiskey intensifies the effects, but that strychnine relieves them promptly, and he considers a hypodermic of strychnine the best antidote to cocaine-poisoning. Cocaine must be used hypodermically on all parts covered by sound skin, but on mucous membranes this is, as a rule, unnecessary and unadvisable. In the mouth and nose, it is best applied by a spray or by rubbing a cocaine tablet over the part to be affected. The latter method is more effective if the tablet can be held against the part for several minutes without producing cough or gagging. Anæsthesia thus produced is incomplete, superficial, and of short duration, but sensation in the mouth is not acute, and it answers a good purpose. Its hypodermic use in the mouth gives no better results. 2 or 3 grains placed in tablet form in the uterus and cervical canal will render dilating and curetting painless, provided we give it fifteen or twenty minutes for absorption, and do not pull the uterus down to do the operation. In operating for lacerated cervix, it is better to inject it into the cervix. Pulling down the uterus for either of these operations is usually unnecessary and Carr thinks is to be condemned. For chancroids and ulcers, it is only necessary to lay a tablet on the surface and allow it to dissolve in the secretion, or, if the surface is large, powder one or two tablets and sprinkle over it; this is much more efficacious than a solution. The same rule holds in the urethra. For passing the sound in a very sensitive urethra, it is only necessary to inject enough of a two-per-cent. solution to distend the urethra; but for cutting strictures, a few drops of a saturated solution, or, better still, a tablet, should be carried back to the stricture. For enlarging the meatus, it is only necessary to place a tablet just within the opening and let it dissolve.

There are many uses for local anæsthesia that are not surgical. The pain of incurable cancers may often be greatly palliated by local applications of cocaine, and carbolic acid in the form of an ointment or of suppositories; and a similar ointment will be found efficacious in superficial neuralgias and other painful affections of the skin. In all chronic affections, however, we should use it cautiously, for fear of inducing the cocaine habit.

In this connection may be mentioned a fact well worth knowing, that chordee may be entirely and promptly relieved by putting on a condom containing 2 or 3 drachms of a two-per-cent. solution of carbolic acid, and that any pain in the penile portion of the urethra or pendulous penis may be controlled in this way. The writer had a patient with a mixed chancre in the meatus who suffered great pain upon mic-turition. He recommended the condom, and he experienced the greatest relief from putting it on for fifteen or twenty minutes before urinating.

#### *BENZONAPHTHOL AND BISMUTH SALICYLATE IN SUMMER DIARRHŒA.*

The term summer diarrhœa is here used to include the various forms of gastro-intestinal disturbance occurring during warm weather, and especially characterized by frequent, loose, or even fluid discharges from the bowel, sometimes attended with pain, sometimes attended with fever, sometimes associated with nausea and vomiting.

While the pathology and etiology of these various forms of disturbance of the alimentary canal vary in particulars, the general factors are the same: an indiscretion in diet, special or general, remembered or forgotten; over-heating or over-exertion in the heat; irritation or inflammation of the gastro-intestinal mucous membrane in whole or in part; bacterial activity; intoxication by absorption of noxæ from the intestines. After the alimentary canal has been cleansed of irritating materials by the most available means, which may be, according to circumstances, lavage of the stomach, irrigation of the bowel, or the administration of a purge, usually calomel, or a mixture of castor oil and spiced syrup of rhubarb (equal parts), and after the diet has been duly regulated, Cohen has observed very satisfactory results from the administration of the following combination:

**R** Benzonaphthol,  
Bismuth salicylate,  
Dover's powder, of each, gr. v.  
In capsule. cachet. or powder.

To an adult, 1 capsule is given every three hours, or as necessary. It is rarely needful to exceed four doses in the twenty-four hours. To children, the same preparation may be given in reduced dosage; thus, to a child of two years he has given,—

**R** Benzonaphthol, gr. ii;  
Bismuth salicylate, gr. ii;  
Dover's powder, gr. ss.

In the mildest cases benzonaphthol alone has proved efficient, and in many cases the opium is unnecessary; but, as a rule, the combination of the three ingredients in the proportions stated is more promptly efficacious, if present experience can be relied upon, than any other routine treatment he has used. The past season is the second one during which he has employed it.

A word may be added as to diet. It is best, under the conditions stated, to make a complete change in the food, whether of child or of adult. If a child is taking milk in any form,—sterilized, boiled, predigested, or plain,—all milk should for the time being be cut off. It will not harm a child to go without food for a day or two, but as parents cannot readily be brought to see this, it is best to give some substitute. Barley-water and (home-made) beef-juce are the most available. They may be given alternately in small amounts,—from 2 to 4 ounces of barley-water; from 1 to 4 drachms of beef-juce, freshly prepared, every third or fourth hour. If a child has been sick for some time and is much run down, alcohol (from 10 to 20 drops of brandy or whiskey) may be added, or given with water between food-times. Smaller quantities of beef-juce, given more frequently, may sometimes be called for by the special conditions of a particular case. If a child is taking various kinds of food, but not much milk, boiled milk with pancreatic powder may be given, as with adults. As a rule, however, it is advisable to avoid milk until the alimentary canal is rendered aseptic, for milk is quite liable to undergo deleterious change after being swallowed as well as before,—a point that is frequently overlooked.

In the case of adults, it is usually safe to give boiled milk, in some instances adding sufficient pancreatin and sodium bicarbonate to accomplish artificial digestion in the stomach. He usually prescribes 2½ grains of pancreatin and 7½ grains of sodium bicarbonate (*i.e.*, 1 drachm and 3 drachms respectively, divided into twenty-four powders, in waxed papers), to be dissolved in an ounce of cold water, and the solution added to

a teacupful of warm (previously boiled) milk; this is taken every third hour. When the patient refuses milk, or it is for other reasons objectionable, beef-juice, barley-water, tea, coffee, sherry and water, whiskey and water, claret and water, and the like may be given in small quantities. In most cases the whole question of 'alimentation' is a negative rather than a positive one,—to avoid food that will ferment or decompose, or otherwise give rise to irritating products or toxins, for recovery is usually so prompt that the problem of maintaining nutrition does not arise. It is usually best to give water freely, aerated water being preferable.—COHEN, *Medical News*, July 28, 1894.

### CONJUNCTIVITIS, ACUTE AND CHRONIC.

MOORE contributes an article on this subject to the *Post-Graduate* of September, 1894. This is, perhaps, one of the most obstinate forms of acute or subacute conjunctivitis to deal with, unless the cause is appreciated. It is best in all cases of conjunctivitis to examine the tear-passages and ascertain their condition. If there is obstruction, treat the nasal end of the lachrymal duct by sprays or powders, and use mercuric bichloride (1 to 8000) on the conjunctival cul-de-sac. If this does not remedy the lachrymal obstruction, then open the canaliculus by the Bowman operation, thus giving free drainage. This, with the use of the antigermicide, will cure the condition. These cases, treated in the ordinary way by the application of astringents to the eyelids, will, as a rule, avail nothing, but speedily respond to the treatment outlined above.

Nasal conjunctivitis, by which we mean inflammation of the mucous membrane of the eyelids, due not to obstruction of the lachrymal duct, but to an interference in the free nasal breathing and ventilation of the head through the nose, due in most instances to a hypertrophic rhinitis, and, perhaps, to enlarged tur-nated bodies. The symptoms of these cases persist even when the most approved method of treatment have been used for simple conjunctivitis, and the redness of the eyelids and the blepharitis only gives way when the nasal obstruction and rhinitis is under control. We could cite many cases where this cause had been overlooked, and which speedily recovered on the treatment of the nose and throat.

Traumatic conjunctivitis is frequently met with as the result of the injury of the mucous membrane by the entrance of foreign substances, and which speedily gives way on the

removal of the exciting cause. After exposure to the sun's rays, or the impact of air in sailing or rapid driving, we frequently observe a form of conjunctivitis, which we justly call traumatic. We have all seen, doubtless, the conjunctiva sun-burnt and air-inflamed. For these forms we use the application of cold compresses ten minutes at a time, four times a day, together with protecting colored glasses and moderate out-door exercise; in fact, most all the simple forms of conjunctivitis do much better in the air than when housed. Occasionally, in traumatic conjunctivitis, with moderate secretion, an eye lotion of alum and boracic acid, three grains each to the ounce of water, will be found efficient and soothing. Electric-light conjunctivitis comes under this class, and is now quite often seen, especially in those engaged in works where the arc light is used. Protection of the eyes by colored glasses and abstinence from the usual employment for a few days will usually rectify this difficulty.

In the treatment of all the forms of simple, acute, or subacute conjunctivitis, we are in the habit of prescribing applications to be made to the closed eyelids of cold water, by means of cloths or pieces of old linen. These dipped in cold water or, better still, placed on a piece of ice and then transferred to the eyelids, make a very soothing and beneficial form of treatment. Then a solution of alum and boracic acid, as mentioned above, is given the patient to use at home, 2 drops in each eye, twice daily.

Purulent conjunctivitis is the most serious of all the inflammations of the membrane we have to deal with, and we know of nothing more sad than the picture so frequently seen of the helpless infant, but a few days old, presented for our care, with both corneæ infiltrated, the eyelids bathed with pus, and the eyes hopelessly destroyed, when, if the appropriate remedies had been used, the child would have been saved a lifetime of misery. Another form seen in the adult is the purulent conjunctivitis caused by the germ of gonorrhœa,—an exceedingly disastrous inflammation, and one that will destroy the eye within forty-eight hours unless treatment is very promptly inaugurated. The eyelids are very much swollen, and the skin red and glossy, and the secretion copious. In either the infant or the adult, if only one eye is affected, the non-affected should be protected and shielded from inoculation by means of "Buller's shield," which is simply a watch crystal held in position by means of adhesive plaster. Thorough cleanliness is godliness in this instance, and should be rigorously carried



out; in fact, this class of patients should only be treated as in-door patients, and then isolated. All things used in removing the secretion from the eyelids should be promptly incinerated, and thus all further danger of contagion removed. The eyes should be cleaned as often as the secretion accumulates,—every half-hour, if necessary. The eyelids should also be opened and the secretion removed by the use of a small syringe, injecting through the cul-de-sac and over the eyeball a solution of mercuric bichloride (1 to 8000), in order to cleanse and, at the same time, act as an antiseptic. If the secretion is considerable and there is not much bleeding from the palpebral conjunctiva, applications should be made by the medical attendant to the everted eyelids of a solution of silver nitrate, ten grains to the ounce of water. This should be in many cases applied twice daily, and continued until the secretion begins to diminish, when the strength of the solution may be reduced to five grains and the applications made once daily. It is extremely important that applications of iced cloths should be kept up in the adult continuously for the first few days and in the infant as frequently as tolerated. The best way is to take a large piece of ice, wrapped in flannel, and upon this place small squares of old linen, and when they are thoroughly cold transfer them to the closed and inflamed eyelids. When the cold becomes too intense, the applications may be interrupted for a time, or when the cornea shows signs of lack of nutrition, they may be altogether omitted, and even warm compresses applied; this, however, is rare. After cleaning and making the silver-nitrate applications, it is best to fill the conjunctival cul-de-sac with vaseline, as it has been found to lessen the secretion and probably render the propagation of the germs more difficult.

#### CHOICE OF ANÆSTHETIC FOR REMOVAL OF NASO-PHARYNGEAL ADENOIDS.

In the *Medical Chronicle* for August, 1894, MORITZ goes carefully over this subject, which has lately been discussed at a joint meeting of the London Laryngological Society and the Anæsthetists' Society, and, considering the frequent occurrence of cases of naso-pharyngeal adenoids, it must be acknowledged that the subject is one of considerable interest.

Wyatt Wingrave, in a letter to the *British Medical Journal*, drew renewed attention to this subject. He says that he has administered anæsthetics for tonsillotomy and removal of

adenoids upward of eleven hundred times. In about ninety per cent. of these cases he has given nitrous oxide gas alone, administered through a modified Clover's gas and ether inhaler, the patient being in a sitting posture, a mouth-prop being inserted before applying the face-piece, while the whole operation was usually completed in less than forty seconds. The supplementary administration of a few whiffs of ether was not always satisfactory, as it increased the struggling and bleeding. In less than twelve cases a second administration of gas was required. He warns against the use of chloroform in these operations, and collates five cases of death under chloroform for removal of adenoids, recorded in the *British Medical Journal* and *Lancet* since May, 1892. He remarks that the use of gas was prompted more "by humanitarian" reasons than with the object of combating serious pain.

Holloway draws attention to two more deaths which had occurred within a fortnight from the administration of chloroform for the removal of adenoids, and he urges again the advisability of being satisfied with the anæsthesia obtainable by nitrous oxide, as generally done at the Central London Throat Hospital. Mr. G. C. Wilkin also uses nitrous oxide, while Dr. Storry administers ether. Mr. Grant Morris, anæsthetist at St. Thomas's, prefers chloroform. He keeps the patient on his back, with the head hanging over the end of the table, and he does not push the anæsthetic, so that the cough reflex will not be abolished.

At the meeting of the Laryngological Society, held on April 11, 1894, of the sixteen gentlemen whose speeches are reported, six are in favor of nitrous oxide alone; but two of these let the inhalation of  $N_2O$  be followed by an inhalation of oxygen, and three of them by the administration of ether in more severe cases. Two gentlemen always administer  $N_2O$  and ether; one,  $N_2O$ , ether, and chloroform; and four give chloroform at once, two giving it until deep anæsthesia, while two others do not push the anæsthetic quite so far.

Considering the diversity of these predilections, Dr. Semon, the president, was therefore justified in pointing out that the discussion had proved the impossibility of laying down arbitrary laws on this question. He considers the practice of performing such operations on out-patients very deplorable, and he objects strongly to the induction of complete anæsthesia; the ocular reflex should be abolished, but the cough reflex should not.

Latterly, the writer has followed the plan advocated by Wroblowski, of Warsaw, who

either paints the parts to be operated upon with a solution of antipyrin (2 parts), cocaine (1 part), and water to 10 parts; or, better still, paints with a ten-per-cent. cocaine solution, and injects a few minutes after in two or three places, under the mucous membrane in each place, 2 minims of a fifty-per-cent. antipyrin solution. Wroblowski was able to remove in this way, painlessly, lamellæ of a deviated nasal septum, operations which lasted half an hour; and the author confirms Wroblowski's statement that not only tonsils and adenoid vegetations may in this way be removed without pain, but that there is no pain afterwards. Wroblowski applies these solutions with similar good results in removal of the lingual tonsil,—a very painful procedure,—and after injecting a few drops of the antipyrin solution under the mucosa with a Heryng's laryngeal syringe, he is able to do painlessly prolonged laryngeal operations. The same application he has made in cases of tubercular ulceration of the larynx where deglutition has become painful and for solid substances impossible. In a patient of this sort, who had not been able to take solid food for about six months, one hour after the injection of a fifty-per-cent. antipyrin solution into the region of each arytenoid body (one division of a Heryng's syringe, equal to  $1\frac{1}{2}$  grains of antipyrin, being applied in each place), the patient was able to eat a beefsteak. Soon after the injection a slight burning sensation is felt. This lasts about fifteen minutes; then the local anæsthesia commences, and the loss of sensation lasts from six to twelve hours. The ulcerative tubercular process itself seemed to be favorably influenced by these injections. The author is applying at present, with similar favorable results, a paint (ten per cent. cocaine and thirty per cent. of antipyrin) twice a day to the larynx of a tubercular patient, in whom the deglutition of the saliva even had become extremely painful, and who is now able to take food and to swallow for six to eight hours after each application.

The local application of strong solutions of antipyrin to mucous membranes deserves, therefore, a much wider trial.

Where general anæsthesia is indicated for the removal of adenoids, attention might also again be drawn to bromide of ethyl, so ardently recommended by Hollaender at the Berlin International Medical Congress. This fluid,  $C_2H_5Br$ , has its boiling-point at  $105^{\circ} F.$ ; it therefore evaporates quickly; its odor is similar to chloroform. It was first used as a general anæsthetic by Thomas Nunneley, of Leeds, in 1869, who for some time did all his eye opera-

tions at the Leeds Infirmary with this anæsthetic. Since then it has been extensively used both in America and in France, mostly for dental operations. Unfortunately, several deaths have been recorded, but Hollaender and others ascribe these to the use of an impure preparation, as until recently it was somewhat difficult to obtain the pure drug, "ethyl bromide,"  $C_2H_5Br$ , owing to the frequent admixture of ethylene bromide,  $C_2H_4Br_2$ , a very poisonous drug. Hollaender administers ethyl bromide with an Esmarch chloroform inhaler, holding it closely over the mouth and nose to exclude air, and continually dropping the fluid on until anæsthesia is established, which takes place in thirty to forty seconds, and frequently in ten to twenty seconds. The anæsthesia so obtained is not complete, but is sufficient for small operations. The cornea reflex is not abolished, and it is not advisable to wait for its abolition, but only until the uplifted arm falls powerlessly down. Hollaender then at once proceeds to operate; the anæsthesia lasts two to three minutes, and the patient is in another minute fully awake. The pulse remains unaltered; it sometimes becomes even fuller; the pupils are not influenced; vomiting, a stage of excitement, headache, and other bad effects are said to be rare. From 1 to 3 drachms (3 to 10 grammes) of the drug are usually sufficient for an administration. A slow or continued administration of large doses causes considerable excitation and prevents a narcosis altogether. Though bromide of ethyl is said not to influence the heart, it should not be administered to patients with heart-disease. Schmidt also recommends this drug for anæsthesia in removal of adenoids and tonsils, but he finds that he usually requires a larger quantity of the anæsthetic. He has never seen any serious after-effects; but vomiting, he says, takes place occasionally. He therefore prefers to operate early in the morning, and not to give solid food previous to the operation. Schmidt also mentions that frequently the mouth is tightly closed, through contraction of the masseter muscles, so that a gag becomes requisite.

#### THE MANAGEMENT OF FACE PRESENTATION.

DAVIS, of the Jefferson College, in the *Medical News* of July 14, 1894, tells us that the treatment best adapted to secure spontaneous labor in face presentations consists in retaining the membranes unbroken until the time of spontaneous rupture; in sustaining the patient's

strength and conserving her energies by suitable feeding, stimulation, and anodynes, and in placing the patient in such a posture as to favor the rotation of the chin anteriorly. When the face looks towards the left side of the mother's pelvis, she should lie upon the left side, her thighs flexed, and the uterus brought as nearly as possible with its long axis corresponding to the axis of her body during labor-pains. Should the foetal face look towards the right side of her pelvis, she should lie upon her right side. The relation of cause and effect that has been found to exist between obliquity of the uterus in the mother's abdomen and face presentation renders the maintenance of the uterus in a favorable posture during this complication a matter of considerable moment. It is quite possible in such cases for a face presentation to be spontaneously changed into an occipital one, and for the occiput even to rotate spontaneously to the front, if these precautions are observed. The administration of such substances as tend to maintain efficient uterine contractions is certainly indicated in these cases before the membranes rupture. As soon as dilatation is complete, the obstetrician is to choose between radical interference by version, or an effort by the methods of Badoque and Schatz to correct the face presentation by converting it into an occipital one. His choice in this decision should depend upon the size and shape of the mother's pelvis, the comparative size of the foetal head, and the condition of the pelvic floor. When no disproportion exists between the head and the pelvis, and when the pelvic floor, although elastic and resistant, offers no undue obstacle to the mechanism of labor, it is certainly proper to allow the head, under good labor-pains and with good extension, to come down upon the pelvic floor in face presentation, and thus an opportunity be given for the mechanism of labor to proceed spontaneously. When, however, there is a disproportion between the head and the pelvis, as evidenced by pelvic proportions less than the average, ascertained by pelvimetry or a large foetal head, as ascertained by palpation and a thorough vaginal examination under an anæsthetic, the case becomes quite different.

The results of forcible delivery in face presentations under these conditions are anything but satisfactory and encouraging. The literature of the subject abounds in illustrations of difficult deliveries by forceps, craniotomy, and, in some cases, by version, in which the life of the child has been lost and the mother seriously injured. In the light of our present knowledge,

the duty of the obstetrician lies in completely changing the presentation, if the pelvis be roomy, by podalic version under anæsthesia by chloroform, or in so enlarging the pelvis that the mechanism of labor in face presentation can continue.

Podalic version for face presentation is familiar as an expedient, and is, in well-selected cases, a prompt and efficient method of treatment. Symphyseotomy is a procedure of too recent date to occupy an established place in these cases in the resources of obstetric art. His resources for considering this a rational procedure are as follows: Personal observation in four symphyseotomies done for disproportion between the head and the pelvis has led him to remark the decided increase of the oblique diameters of the pelvis that follows the separation of the pubic joint. In three of the four cases the foetal head presented in an occipito-posterior position, in two cases the right occipito-posterior, in one the left. In one of these cases the head presented by the right parietal bone before the pelvis was opened. Remembering the observation by many obstetricians that face presentations are often developed out of occipito-posterior positions, it seems to the author rational that any surgical procedure which should enlarge the oblique diameters of the pelvis, and which naturally favors the descent of the occiput in the arc of the pelvic curve lying between the sacro-iliac joint and the spine of the pubes, would afford rectification of this abnormal presentation. The three cases of occipito-posterior position following symphyseotomy were readily delivered without injury to mother or child.

Obstetricians are familiar with the facility with which faulty presentations of the head and shoulders may be remedied when two conditions are present: first, complete anæsthesia of the mother; and, second, a pelvis of good size in its oblique diameters. Reasoning from the author's experience in the cases cited, these conditions are present after symphyseotomy; and were the spontaneous progress of labor in this presentation to fail, he should much prefer, if the pelvis were of good size and the head not impacted, to perform podalic version; or, if the head were impacted and disproportion existed between the head and the pelvis sufficient to occasion difficulty in labor, the face presentation persisting, the writer should hope for a favorable result from symphyseotomy, converting the face presentation into a vertex presentation, and delivering the occiput in the manner most easily available after the pubic joint had been opened.

## TREATMENT OF TYPHOID FEVER.

In the *Medical News* for July 14, 1894, FISK, of Denver, describes his treatment as follows; he has certainly obtained very good results:

Absolute rest. If the patient is seen early in the attack, as gauged by the absence of rose spots and other constitutional symptoms, the writer gives 5 grains of calomel at night, and follows it with a Seidlitz powder or some saline in the morning, and this is the only administration of calomel during the progress of the disease. He then puts the patient on an absolute milk diet, giving a tumblerful every three hours. As a rule, the writer is not influenced by the patient's ideas that it is impossible to take milk, but determines that by his own observation. When he finds this to be true, he has the milk peptonized, and sometimes changes to buttermilk. Extractive matters in the way of broths and extracts are not used, as they always seem to be harmful.

The turpentine mixture used is becoming well known in our hospitals and is meeting with great favor. It is constituted as follows:

R. Ol. terebinthinæ, ℥ii;  
Ol. ricini, ℥ii;  
Bismuth subnit., ℥iii;  
Mucil. acaciæ, q. s. ad ℥iv. M.

This must be shaken well, and a teaspoonful given in a little water twenty minutes after the goblet of milk.

The turpentine in this formula seems to be sufficient to keep the tongue moist and to stimulate the bowels; the castor oil keeps up the secretions, and the bismuth acts, as is well known, as a dressing to the inflamed mucous surface; the last also has a constipating effect, which is overcome by the administration of castor oil (from a dessertspoonful to a table-spoonful) every other morning. For the restlessness of the first few days, which is especially marked at night, he uses either 5 grains of Dover's powder, to be repeated once or twice during the night, or 10 drops of McMunn's elixir of opium, to be repeated once or twice, if needed. Water, iced, if preferred, is given freely; lemonade, not too sweet, is allowed, but not to conflict with the taking of the milk. Antipyretics, like antipyrin, antifebrin, acetanilid, phenacetin, and even quinine (for its antipyretic effects), are absolutely forbidden. Stimulation he reserves for necessity, as indicated by marked nervousness, a rapid and feeble pulse, and for the stage of convalescence. In both instances whiskey is preferred, care being taken to secure a good quality. Of heart-tonics, strophanthus is given rather a preference, and at times he resorts to hypo-

dermic injections of strychnine. He has never used the cold baths of Brand; at the utmost, sponging with tepid water seems to be sufficient, though not often employed.

He believes that great care must be taken in feeding a patient in the stage of convalescence. He thinks it is well to keep him on the milk diet indicated, increasing, however, the amount, if needed, for a week after the temperature has come to the normal. He then begins to feed very gradually, preferring animal to starchy diet.

It will be seen that the methods employed are quite different from those advocated by others. The strict adherence to a milk diet is, of course, nothing new, and as far back as 1866 we find Dr. Cotting, of Roxbury, Mass., reporting in the London *Lancet* three hundred and seven cases of typhoid fever treated without drugs of any kind and a mortality of only ten per cent.

Professor Osler, in his recent publication, says, "Milk is the staple article of diet, of which from 3 to 4 pints are given in the twenty-four hours." This is about the amount the writer used.

Dr. Hutchinson says, "Milk as an article of diet is unquestionably to be preferred to all others in typhoid fever."

The administration of turpentine was advocated by the late Professor George B. Wood and indorsed by Dr. Hutchinson, though the dose employed was greatly in excess of that found in the turpentine mixture.

#### THE COLD POULTICE AS AN ANTI-PYRETIC IN HIGH GRADES OF FEVER.

BEDFORD BROWN, in the *Virginia Medical Monthly* for September, 1894, advises the use of the cold poultice. He orders that a sufficient quantity of flaxseed meal to prepare a poultice of suitable dimensions be placed in a common earthen bowl, and over this is poured boiling water, while the meal is constantly stirred with a large spoon until cooked to the consistency of soft mush. This material is then spread on a piece of soft cotton cloth, for an adult, about eighteen inches long and twelve or fourteen wide, or sufficiently long to cover the entire abdomen, from the pubis upward, extending at least half-way up the chest, well over the cardiac region, so as to fully cover the heart and half of the chest. This poultice is now covered with another piece of cotton of corresponding dimensions. After being spread and covered, the entire surface to be applied

to the person is frequently besprinkled with ice-water until its temperature goes down to 68° or 70° F., when it is ready for application. At this point the author suggests that the poultice be not spread too thick, as in that case it would prove oppressive to the patient.

The poultice as thus prepared is applied over the chest, from above the cardiac region to the pubis. In the writer's experience with it, which dates back fifteen years, he has never known it produce shock to the nervous system or discomfort to the patient. On the contrary, patients with high fever, who have learned its advantages, will often request it when they feel sensations of rise of temperature. Its work, different from that of the cold bath, is accomplished slowly, gradually, gently, and effectually. The cold poultice applied in this way is a good substitute for the cold bath, without its many disadvantages, dangers, and difficulties of application.

In cases of fever, with a dangerous degree of hyperpyrexia, say 106° or 106.5° F., with delirium, insomnia, constant restlessness, contracted pupil, scanty, high-colored urine, these symptoms clearly indicate that this intense degree of temperature is exerting a destructive influence on the great nervous centres,—the brain and spinal cord; and if prompt measures are not taken to reduce this hyperpyrexia to a safe degree, the brain and spinal cord will be overwhelmed in hopeless ruin. This can only be accomplished either by the cold bath, internal antipyretics, or the cold poultice. In certain cases in the author's practice the latter measure, applied over the entire spinal column, from the cervical vertebræ to the sacrum, with these symptoms, has exerted a marvellous effect in relieving the nervous system, in subduing inordinate nervous erethism, relieving delirium and restlessness, and in promoting sleep.

In a case of this kind, during a relapse from a four weeks' illness, where the temperature approached 106° F., pulse 130, utter sleeplessness, and constant restlessness, a long poultice, at 70° F., was applied from above the cardiac region to the pubis; another, at the same temperature, ten inches wide, was applied over the nucha to the sacrum, and the head having been shaved, an ice-bag was applied over the head. In two hours there was a reduction of two degrees; in twelve hours a reduction of five degrees, with copious warm perspiration, with the result of refreshing sleep, nervous composure, relief of delirium; and reduction of the pulse to 100. On one or two occasions subsequently, when there was manifested a disposition of these symptoms to return, the same remedies were applied, with identical

results, and under the usual treatment the case terminated in recovery.

In the treatment of acute peritonitis the powers of the cold poultice have not been tested by him as an antipyretic and antiphlogistic. He believes that in this class of cases poultices, at a temperature of 70° F., applied systematically at intervals of one hour, would exert a beneficial influence.

There is a certain degree of art to be observed in the preparation of these poultices. They should not be spread so thick and heavy as to weight down the patient and cause a sense of oppression; not over a quarter of an inch in thickness, and then reduced to a uniform temperature, as tested by the clinical thermometer. In cases of temperature not exceeding 102° F., Brown often orders a cold poultice at first made with hot water, and then permitted to cool either by the atmosphere or application of ordinary hydrant- or pump-water, and obtains excellent results.

#### *SOME POINTS IN THE TREATMENT OF TYPHOID FEVER.*

In the *Medical Press and Circular* for August 22, 1894, BROADBENT writes on this topic. In intestinal hemorrhage the treatment on which the author has come to rely is the placing of a large ice bag over the right iliac fossa, the administration of a full dose of some liquid preparation of opium, and the subcutaneous injection of ergotin. 10 or 15 minims of turpentine may also be given every three or four hours. The object of the opium is to paralyze the bowel. The blood poured out into the intestinal canal excites peristalsis, and the peristalsis, in turn, tends to prevent the formation of clot on the bleeding surface, which might seal up the vessels. It must, therefore, be arrested; and it is because opium given by the mouth appears to effect this better than morphine hypodermically that this method of administration is preferred.  $\frac{1}{2}$  drachm of laudanum, or its equivalent of liquor opii, may be given at once. Opium, again, seems to have a certain sustaining power. Astringents, supposed to act directly on the bleeding vessels, are useless; long before they have traversed the twelve or sixteen feet of bowel to reach the ulcers they will have expended their power of coagulating blood or astringing tissues. When the medical man lives at a distance from the patient, the nurses should be provided with an ice bag, laudanum, and hypodermic pellets of ergotin, and have instructions to employ them immediately on the occurrence of serious hemorrhage.

Great caution must be exercised in administering stimulants. The half-fainting condition affords the best opportunity for the bleeding to cease, and the longer the patient can be kept in this state with safety the greater is the chance of the arrest being final. Perforation of the bowel is almost always fatal, but the writer has seen at least two cases of recovery in which, from the symptoms at the time and the formation of a dense mass of thickening between the umbilicus and the right iliac fossa, he has had no doubt of its occurrence. The one chance for the patient is the administration of a large dose of opium or morphine for the double purpose of minimizing the terrible shock which attends perforation and of arresting intestinal peristalsis, and so minimizing the extravasation of the contents and affording an opportunity for adhesions. The writer should not hesitate to inject  $\frac{1}{2}$  grain of morphine under the skin and give 30 or 40 minims of laudanum by the mouth.

We come now to the third great source of danger in typhoid fever,—the protracted high temperature. One of Sir William Gull's pregnant sayings was that the removal of symptoms is not the same thing as the relief of disease. The antipyretics not only knock down the temperature, but the patient also, sometimes fatally. The writer's conclusions are based entirely upon observation, but it is interesting to learn that Roque and Weill have found out that antipyrin arrests the elimination of toxins by the urine without preventing their formation. Quinine has done good in large doses as against high temperature. The most efficacious means of controlling the heat of fever, however, is the application of water to the surface of the body. The good results of the bath treatment have long been known to the profession in this country, but it has not come at all into general use. The principal reason, no doubt, is that cold bathing is usually very distressing to the patient, that the labor involved is great, and that in the general hospitals it is difficult to make the special provision required and to supply the additional number of nurses.

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*ON THE EFFECT OF GIVING LEVULOSE  
AND INULIN TO PATIENTS SUFFERING FROM DIABETES  
MELLITUS.*

HAYCRAFT records the results obtained in three cases of diabetes by giving levulose as a carbohydrate food. The patients were placed on a fixed diet, from which the carbohydrates

were excluded as far as possible and the sugar estimated in the urine. In alternate periods of three days, fifty-five grammes of levulose were given per diem in six doses. The quantity of sugar excreted was determined by Fehling's solution and by polarization.

In the first case (one of acute diabetes) the average increase of sugar excretion in the urine produced by the administration of levulose was one hundred and six grammes for the period of three days. During this period the patient had taken fifty-five multiplied by three equals one hundred and sixty-five grammes of levulose. Of this, nine grammes (equals five per cent.) were excreted again as levulose; ninety-seven grammes (equals fifty-nine per cent.) were excreted as glucose; fifty-nine grammes (equals thirty-seven per cent.) remained in the organism. Similar results were obtained in a second case of acute diabetes.

In a third case (one of chronic diabetes in an old person) all the levulose taken was utilized in the organism, and there was no increase in the glucose excreted.

Experiments on rabbits showed that glycogen can be formed from levulose. A rabbit was kept without food for six days. (At the end of this time one may assume that all the glycogen in the liver would have disappeared.) Then a solution containing 15 grammes of levulose was injected into the stomach; four hours later the animal was killed. A large quantity of glycogen was found in the liver. In four other rabbits the experiment was repeated; they were kept for seven days without food. Two were killed, and to the two others were given 15 grammes each of levulose, and both were killed four hours later. No glycogen was found in the liver of the first two rabbits, but it was present in the liver of the two which had received the levulose.

From the above observations and experiments the author draws the following conclusions:

1. A patient suffering from chronic diabetes can utilize fifty grammes or more of levulose daily.

2. In some acute cases a part of the levulose taken with the food is excreted as such, a part is utilized in the body, and a part is transformed into glucose.

3. In rabbits, glycogen is formed from the levulose taken, and is stored up in the liver.

Hale White records the result of a number of careful experiments on eight diabetic patients with regard to the effect of giving levulose and inulin. Levulose prepared by Von Schering was employed, and inulin in the form of dahlia

tubers was given. The following are the conclusions at which he arrives:

1. If large amounts of levulose are given, some of it appears in the urine.
2. In none of these cases did levulose have the pernicious effect—often seen with ordinary carbohydrates—of increasing the output of sugar beyond the extra quantity given.
3. When levulose is given, the excretion of sugar is usually increased, but it may be diminished.
4. In most cases much less sugar is passed in the urine after giving levulose than would have been excreted if the previous excretion of sugar had remained stationary and all the levulose had appeared in the urine. This result seems to indicate that in these cases some of the levulose given was retained and used up in the body.
5. There is some evidence that the larger the amount of levulose the less will be the increase of sugar in the urine.
6. While, therefore, some of these cases show that levulose can be utilized better than dextrose, none of them show that dextrose can be utilized better than levulose.
7. None of the patients felt worse for taking levulose; indeed, some felt better and gained in weight.
8. Probably a moderate amount of dahlia tubers, taken as a vegetable by patients suffering from diabetes, would do no harm.
9. The effects of levulose on the excretion of urea is unimportant.
10. The amount of urine passed when levulose is given varies with the quantity of sugar passed.—*Medical Chronicle*, September, 1894.

#### MALARIA AND ITS THERAPEUTICS.

Previous to entering upon a short discussion as to the therapeutic value of the various drugs described as useful in malaria, FORBES, writing in the *Medical Press and Circular* of July 4, 1894, prefaces his statements by laying down as an axiom "that no single drug should be looked upon as a specific." Before passing to antipyretics, about which so much has been written of late, there is one drug—namely, "opium"—of the utmost use in prevention and cure of many malarious states. It has been stated, on what grounds we cannot conceive, that opium is useless in malaria, except to cure the pains. Not only the author's Indian and African experience proves this to be a false basis and a remark that could not be made truthfully by any practitioner with extended clinical

knowledge, but opium is acknowledged by the natives of India and many eminent Indian medical specialists to be of extreme value not only as a prophylactic, but also as a curative agent, by means of its sedative, anodyne, and perhaps most of all by its stimulant properties. These latter are contained in narcotine, which may be termed an extractive of opium; it has been used with some effect in these fevers. Opium is a wonderful stimulant in premonitory stages of fever, and in the case of those who have acquired the opium habit properly, so as to become regular consumers, it acts as a marvellous safeguard against dangerous attacks of fever, and even cholera, dysentery, etc. This is confirmed on all hands by Indian medical officers, some of whose evidence given before the Royal Commission on Opium has been published as extracts in the late numbers of the *British Medical Journal*. A full dose of morphine—say 1 drachm of liq. morphine acetatis—is reported by Surgeon-Lieutenant-Colonel Edward Lawrie, of Hyderabad, to have cut short cases of malarious remittent, the temperature in a few hours becoming normal or almost so, with the best results to the patient. Personally, the writer's experience was the same, having a severe attack of African remittent, temperature varying from 104° to 108° F., in spite of antipyrin and aconite. He took three hypodermic tabloids of morphine ( $\frac{1}{4}$  grain), one every thirty minutes, and next morning, after sleeping two hours, his temperature was much reduced and he felt almost well. At this juncture it must be premised that each drug does not appear, by observations noted in the tropics, to act in the same fashion as has been observed in temperate climates. And also that residence and practice in the tropics should be deemed the basis on which any knowledge of tropical disease can be acquired or that can enable the surgeon or physician to speak with any authority on these at all times obscure complaints, such as "sleeping sickness" of the Congo, etc. As an initial treatment,  $\frac{1}{16}$  grain of pilocarpine nitrat. will generally drench the patient with perspiration and will certainly abort an ordinary attack. He then reviews briefly the medicines generally used in treating these fevers: As antipyretic and anodyne, (1) antipyrin or phenazone is a most valuable drug in both senses, although the writer has to report one death in the Gold Coast Colony from its use; still, the dosage was high; the surgeon in attendance gave upward of one hundred grains in less than twenty-four hours. In this case it was also suspected that the patient had some fatty degeneration of the cardiac fibres. In any case,

in moderate doses, the remedy is most frequently valuable and non-toxic. The author's plan is to give never more than 10 grains, or even 5 grains repeated frequently, say every hour, and if temperature after a few hours shows no sign of fall, the drug should be stopped and recourse had to some other treatment.

Salicinum is a safe and reliable antipyretic; especially in those attacks which exhibit so-called rheumatic symptoms it is a perfect substitute for salicylate of sodium, without any of its dangerous properties.

Phenacetin he has used much and successfully, especially in India, but it is not so sure as antipyrin, and is much more liable to cause unpleasant and even dangerous symptoms. Care should be taken not to employ it in patients with organic heart-disease.

Antifebrin has been lauded as an antipyretic. His experience and that of others does not approve its use, as it is exceedingly liable to cause cardiac troubles and cyanosis.

Aconite in the form of tabloids of tinctura aconiti is reliable, which is more than can generally be said of the British Pharmacopœia tincture, and is undoubtedly the most successful remedy we have in both Indian and African remittents. It can be used when even antipyrin fails, as an anodyne, antipyretic, and analgesic; it is unsurpassed in these complaints by any other drug, and used in remittent fever may be termed "our sheet-anchor." It is poisonous, truly, but its control of the neuro-vascular mechanism is great, and it is, besides, the most powerful drug we have available in this class of disease.

Dover's powder, pulv. ipecac co., may be classed partly as a sudorific anodyne and partly as an antipyretic, and may be given, starting from the initial stage of fever, every hour in 5-grain doses.

Warburg's tincture, an empiric formula (containing opium, quinine, and aromatics), is without its equal in persistent and protracted agues, and can be used, as the author has done before antipyrin, etc., were known, with striking success in some of the worst forms of fever. It is also prophylactic against the return, when expected, of intermittent attacks. Those patients who can take it readily can be sure of great benefit accruing from its occasional use, but its taste is nauseous, unless taken in the tabloid form, quickly swallowed (dose,  $1\frac{1}{2}$  to 3 drachms). Should the administration of any or all of the above, given in succession, prove of no avail, our last resource, in strictly speaking antipyretic (it might here be almost called revulsant) treatment, is the cold bath or cold

wet pack. These, in skilful hands, have saved many lives, and even in the hands of tyros marked success has resulted.

Potassii bromidum is exceedingly useful in 10-grain doses, when severe headache marks initial stage; it is again useful in delirium, phrenetic symptoms which occur in the sanguine temperament, especially in those giving to overeating and heavy drinking. When vomiting supervenes, and this is common, especially in dysenteric and choleraic remittents, almost all drugs must be given hypodermically, as there is continuous vomiting and diarrhoea every few minutes. In one case the writer made considerable impression on the patient by repeated doses of chlorodyne in one of these choleraic attacks, giving  $\frac{1}{2}$ -drachm doses. Some of these were rejected, but some were retained, and the patient recovered, although his pulse was subnormal four hours after commencement of attack."

Hazeline, a distilled product from twigs of witch-hazel, is an almost unfailing hæmostatic; it also seems to act as an astringent to intestinal mucous membranes. It is pleasant to take internally, and can be given with good effect in hæmaturia, hæmatemesis, etc., which are frequent in pernicious attacks, both intermittent and remittent, the dose being 1 to 2 drachms. Should this fail, however, inject subcutaneously  $\frac{1}{16}$  grain of ergotin citrat.; this might be a specific. Ice, when it can be obtained, is also extremely useful, and also in acute dysentery.

Apomorphine hydrochlorate, in doses of  $\frac{1}{4}$  grain, would cut short an attack of bilious remittent by inducing vomiting. It is sometimes, but rarely, a good practice, vomiting being often only too persistent when once established.

Digitalis tincture has proved useful where heart shows signs of failure, and can be combined with advantage with liquor ferri perchloridi.

*Calomel.*—In one dose, from 5 to 10 grains, given at beginning of fever, when there is constipation.

*Methylene-Blue.*—Thayer, in 1892, tried small doses (2 or 3 grains for a dose) on several patients in intermittent fever, with satisfactory results; the drug in no wise gave rise to any unpleasant symptoms, and a cure (temporarily, at all events) resulted. Dr. Pucci says clinically he believes that quinine is responsible for many sequelæ of fever and for the development also of those ictere hæmaturic forms which are so fatal, whereas he used methylene-blue with far different and more successful results. Dr. Rosin confirms this.



Arsenous acid is useful in obstinate intermittents which are often rendered worse by quinine; dose,  $\frac{1}{100}$  grain of tabloids of acid arsenosi.

Quinine (quinine bisulphas) has been up till quite a recent date regarded as a specific, especially in the tropical forms of malarial fever, by even the most eminent and experienced practitioners. Its value as a specific in malaria is confirmed by the dicta of Laveran, Golgi, Hehir, Binz, Manson, and Baccelli (who considers it more powerful as a remedy when subcutaneously injected, and more likely to act directly on the "plasmodium malariae"). Dr. Beaven Rake says the intracorpular pigmented bodies are specially characteristic of acute forms of malaria, and are readily affected by quinine. This can hardly be substantiated by proof adequate against accumulated clinical evidence to the contrary from Europe (Rosin and Pucci), from equatorial Africa (Parke), and from India, wide enough fields for investigation. In his own clinical experience of hundreds of cases of tropical malaria, extending over years, Forbes finds that quinine given in acute malaria is almost as deadly as the disease.

#### THE HYPODERMIC ADMINISTRATION OF MERCURY.

The number of compounds of mercury which have been used by injection into the tissues is very large, and the author formulates the following rules for their safe employment:

All irritant or caustic preparations are, of course, inadmissible. The liquid injected must be chemically pure and sterile. The syringe must be sterilized in all its parts, and an unoxidizable needle (such as iridized platinum), not less than one and a half inches long, must be used. All injections must be given deeply into the tissues, the needle being inserted perpendicularly to the surface.

The lumbar portion of the back and the gluteal region are the best positions. Care must be taken not to introduce the syringe into a vein. Subsequent injections ought to be two to two and a half inches distant from a previous one.

The interval between each injection varies with the effect produced and the preparation employed,—from twice a day with small quantities of soluble preparations to once a month with large injections of insoluble preparations, such as calomel.

*Soluble Injections.*—Corrosive sublimate.

Corrosive sublimate, 1 part;  
Chloride of sodium, 6 parts;  
Sterilized water, 100 parts.

A Pravaz syringeful (about 15 minims) to be injected every day.

To avoid such frequent injections, M. Luke-siewicz injects  $\frac{1}{2}$  to 1 syringeful of a stronger solution every four or eight days. Corrosive sublimate can also be dissolved in sterilized oil, so that fifteen minims contain one-sixth of a grain, which is the usual dose.

Periodide of mercury is also well borne and causes little pain.  $\frac{1}{8}$  grain may be injected, dissolved in 15 minims of sterilized oil, and repeated every day or every other day, as the case may require.

*Succinimide of Mercury.*— $\frac{1}{8}$  grain in sterilized water may be given every day.

Sozoiiodolate of mercury is very active, but causes much pain. The following is Schwimmer's formula:

Sozoiiodolate of mercury, 8 parts;  
Iodide of potassium, 14 parts;  
Distilled water, 100 parts.

About 6 minims are injected every week, and the dose may be carefully increased.

#### Insoluble Injections.—Calomel.

Sublimated calomel, 1 part;  
Liquid vaseline, 10 parts.

15 minims to be injected every fifteen days.

Yellow oxide may be given in the same dose and manner as calomel.

Gray oil is less active than calomel.

Mercury (purified), 20 parts;  
Ethereal tincture of benzoin, 5 parts;  
Liquid vaseline, 40 parts.

$1\frac{1}{2}$  to 3 minims are injected every eight days.

Thymolate of mercury, 1 part, mixed with 10 parts of liquid vaseline, and 7 to 15 minims given every eight days.

Salicylate of mercury may be used like the thymolate.—MANNIAC, abstract from the *Medical Chronicle*, September, 1894.

#### SYMPHYSEOTOMY FOR THE RELATIVE INDICATION, WITH COMPLICATIONS.

DAVIS contributes to the *Boston Medical and Surgical Journal* of August 23, 1894, a paper upon this interesting topic. He thinks that in undertaking symphyseotomy in women older than thirty the operator must not trust wholly to the knife; this is the second case in the author's experience in which a condition of partial ossification has resisted the Galbiati

knife and probe-pointed bistoury. The occurrence of thrombosis during convalescence may be explained by the dislodgement of septic thrombi in the uterine sinuses, although it is not perfectly clear how such infected thrombi could cause no disturbance before the patient turned. A more rational explanation to the writer lies in mechanical injury in the sudden turn done to vessels predisposed to thrombosis by long recumbent posture, a retention dressing about the hips, and recovery from a surgical procedure of moderate severity. There was no evidence of abscess in any part of the thighs, which might readily have followed septic thrombosis. This illustrates well the importance of good nursing after symphyseotomy, without which the writer's patient's complicated labor would have been far more dangerous and trying.

The patient's pelvic measurements were such that delivery, possibly with forceps, was all that was anticipated; symphyseotomy was performed for the relative indication. The case impressed upon the operator and upon the class in clinic the futility of attempting to deliver a living child by forceps without symphyseotomy, when a relative disproportion in size between head and pelvis sufficient to prevent engagement exists.

#### NOTE ON THE PAST AND FUTURE OF VENESECTION.

When to let blood has from the earliest days of medicine been a burning question. The Saxon Leeches were divided on it, their difficulty being the phase of the moon most suitable for the operation. Two or more centuries later, rival schools of medicine held different views as to which side the patient should be bled, some contending that the side on which the inflammation existed was the proper one for venesection; the opponents of this view of the site for bleeding adduced many and learned arguments to prove that venesection was not efficacious unless performed on the side opposite to the inflammation. All this time, however, no physician questioned the value of venesection. The first shock to the medical profession practising this time-honored custom came from a layman, Alaric Renc le Sage, who caricatured the Sagredo of Espinal by the great doctor of Valladolid, Sangrado, who informed his pupil, Gil Blas, that "other physicians make the healing art consist in the knowledge of a thousand different sciences, but I go a shorter way to work, and spare the trouble of studying pharmacy, anatomy, bot-

any, and physic. Know, then, that all which is required is to bleed the patient copiously."

Patients appear to have enjoyed the operation. We read that Mary Anne, daughter of Don Jerome, of Quito, was bled, according to M. Guérin, five hundred times in the space of two years.

In the British Islands phlebotomists travelled the country, thatching houses, spaying sows, and bleeding. A spring and autumn venesection was considered a necessity. Young and old underwent the operation. Nor was the custom confined to this country. Italian families kept their bleeding vessels, and it was an accident of phlebotomy that gave Anel the opportunity for testing his operation for aneurism.

The operation was grossly abused for ages, and, as a consequence, the medical profession and the public became prejudiced against the lancet; it fell into disuse, and thus a useful and efficient therapeutic agent was disregarded.

We are now, however, coming to recognize that venesection has a place in practical medicine, and that the abstraction of a few ounces of blood is sometimes one of the most efficacious measures we can adopt. There is a general consensus of opinion in favor of a careful clinical study of the value of venesection.

The paper on venesection read by Dr. Pye-Smith before the Royal Medical and Surgical Society, in January, 1891, attracted much attention, and in the discussion that followed it was felt that Sir George Humphry voiced the opinion of every thoughtful member of the profession, "that bleeding was one of the most important agents in the treatment of disease." That, as stated by Dr. Pye-Smith, "the accumulation of experience would soon lead to the formation of an opinion as to the cases in which this measure was desirable," will meet with approval of the great majority of the profession at home and abroad, is noticeable from the discussions and papers on the subject appearing in foreign journals.

In the Royal Academy of Medicine in Madrid, Señor Iglesias recently made venesection the subject of a paper, which produced an animated discussion, in which Señor Palido fairly stated that not from any bad results of the operation, but from its abuse it became discredited, an opinion which re-echoes the view of the French Academy.

The operation also forms the subject of a valuable paper by Dr. Stone, in a late number of the THERAPEUTIC GAZETTE, in which, after reviewing at length the conditions which call for venesection, he concludes that he "sin-

cerely hopes that he has convinced some of his audience of the great therapeutic value of the remedy."

Sooner or later the lancet will again come to be a valued weapon in contending with inflammatory diseases.—FRY, in the *Medical Press and Circular*, July 4, 1894.

*THE TREATMENT OF CERTAIN SYMPTOMS OF CROUPOUS PNEUMONIA, PARTICULARLY IN ADULTS.*

ROBINSON has written an able clinical paper with this title. We append extracts from the more important passages, believing the article to be well worth careful study.

The two symptoms in connection with the first stage of croupous pneumonia which are of special interest as regards the efficacy of treatment are pyrexia and pulmonary congestion.

Personally, the writer has not thought it wise to give the modern antipyretic drugs, except in occasional doses. Of these, phenacetin is the most satisfactory. It diminishes fever somewhat and promotes sleep and the general comfort of the patient, without great risk of depression in a marked degree. Acetanilide, in doses of 2 to 3 grains, lowers temperature a degree or two, but without promoting the comfort of the patient or producing sleep. In doses of 5 grains or more it is evidently depressing. Neither of these drugs should be given continuously, and, as a rule, only when the temperature is over 103° F. Robinson relies very much more upon the use of spirits of Mindererus, citrate of potassium, and sulphate of magnesium to reduce temperature by action on the different emunctories of the economy—skin, kidneys, and bowels—than upon the former remedies. He believes still that 3 to 5 grains of quinine every four to six hours tend to diminish fever, while strengthening somewhat the heart, through diminution of local hyperæmia of the lungs, promotion of absorption of the fibrino-corpuscular exudation into the alveoli, and a possible antiseptic action on the blood itself.

As to the use of cold sponging, the ice coil, cold pack, or cool baths for the purpose of reducing temperature, he has come to the conclusion that they do not act in this manner with any special efficacy, as they are usually employed. In this country, at least, treatment of croupous pneumonia with cold baths has not yet become frequent. Occasionally, when the temperature passes beyond 104° F., and is accompanied with delirium, rapid and feeble pulse, frequent respiration, and other

evidences of intense poisoning or adynamia, the tub bath at a temperature of 80° or 90° F. may be usefully employed. Not that the temperature always falls much after the use of these baths, but, combined with continuous frictions during the bath, they certainly quiet delirium, awaken latent nervous energy, and stimulate capillary circulation over the surface of the body.

While these effects are customary, according to those who have made frequent use of cold tub-baths in the treatment of croupous pneumonia, until lately the author has been very doubtful as to their beneficial action. More than once he has seen bad rather than good results follow immersion. The patient has become more cyanosed, dyspnoea more marked, and, if anything, the pulmonary congestion more intense. He is inclined to believe that sponging is a decidedly wiser method than the tub-baths in many cases, if it be combined, too, with friction to help improve the patient's condition through its combined action in lowering the temperature slightly and in increasing nervous energy.

At St. Luke's Hospital the writer has had the opportunity to observe and carefully inquire into the use of aconitine when given at this stage, and often at a later period, with respect to its action on the temperature and pulse. After many trials of this drug, he has been led to believe that its use by itself may often be injurious by diminishing the energy of cardiac contractions, so that they are with some difficulty again strengthened. Even when combined in its use with digitalin, or digitalin and strychnine, it is not free at times from grave objections. Aconite or aconitine seems to act mainly by reducing the tension of the radial pulse and lessening the number of heart-beats, while it diminishes their strength by its paralyzing effect on the ganglia and nerves controlling cardiac contractions. This poisonous effect of aconite upon the heart through its motor ganglia may be shown by direct applications of the drug. As a result of these, the heart is slowed in a very threatening manner, and may stop in diastole.

The author has never seen any drug act as well in this stage of pneumonia as small repeated doses of antimony. The salt he has given most frequently is not tartar emetic, but kermes mineral, or the oxysulphuret of antimony. He has given it in a mixture with syrup of gum and orange-flower water, usually in doses of  $\frac{1}{2}$  grain every two hours, or every hour for a while; employed in this manner, fever and pulmonary congestion diminish at times in a very obvious manner. Expectora-

either paints the parts to be operated upon with a solution of antipyrin (2 parts), cocaine (1 part), and water to 10 parts; or, better still, paints with a ten-per-cent. cocaine solution, and injects a few minutes after in two or three places, under the mucous membrane in each place, 2 minims of a fifty-per-cent. antipyrin solution. Wroblowski was able to remove in this way, painlessly, lamellæ of a deviated nasal septum, operations which lasted half an hour; and the author confirms Wroblowski's statement that not only tonsils and adenoid vegetations may in this way be removed without pain, but that there is no pain afterwards. Wroblowski applies these solutions with similar good results in removal of the lingual tonsil,—a very painful procedure,—and after injecting a few drops of the antipyrin solution under the mucosa with a Heryng's laryngeal syringe, he is able to do painlessly prolonged laryngeal operations. The same application he has made in cases of tubercular ulceration of the larynx where deglutition has become painful and for solid substances impossible. In a patient of this sort, who had not been able to take solid food for about six months, one hour after the injection of a fifty-per-cent. antipyrin solution into the region of each arytenoid body (one division of a Heryng's syringe, equal to  $1\frac{1}{2}$  grains of antipyrin, being applied in each place), the patient was able to eat a beefsteak. Soon after the injection a slight burning sensation is felt. This lasts about fifteen minutes; then the local anæsthesia commences, and the loss of sensation lasts from six to twelve hours. The ulcerative tubercular process itself seemed to be favorably influenced by these injections. The author is applying at present, with similar favorable results, a paint (ten per cent. cocaine and thirty per cent. of antipyrin) twice a day to the larynx of a tubercular patient, in whom the deglutition of the saliva even had become extremely painful, and who is now able to take food and to swallow for six to eight hours after each application.

The local application of strong solutions of antipyrin to mucous membranes deserves, therefore, a much wider trial.

Where general anæsthesia is indicated for the removal of adenoids, attention might also again be drawn to bromide of ethyl, so ardently recommended by Hollaender at the Berlin International Medical Congress. This fluid,  $C_2H_5Br$ , has its boiling-point at  $105^\circ F.$ ; it therefore evaporates quickly; its odor is similar to chloroform. It was first used as a general anæsthetic by Thomas Nunneley, of Leeds, in 1869, who for some time did all his eye opera-

tions at the Leeds Infirmary with this anæsthetic. Since then it has been extensively used both in America and in France, mostly for dental operations. Unfortunately, several deaths have been recorded, but Hollaender and others ascribe these to the use of an impure preparation, as until recently it was somewhat difficult to obtain the pure drug, "ethyl bromide,"  $C_2H_5Br$ , owing to the frequent admixture of ethylene bromide,  $C_2H_4Br_2$ , a very poisonous drug. Hollaender administers ethyl bromide with an Esmarch chloroform inhaler, holding it closely over the mouth and nose to exclude air, and continually dropping the fluid on until anæsthesia is established, which takes place in thirty to forty seconds, and frequently in ten to twenty seconds. The anæsthesia so obtained is not complete, but is sufficient for small operations. The cornea reflex is not abolished, and it is not advisable to wait for its abolition, but only until the uplifted arm falls powerlessly down. Hollaender then at once proceeds to operate; the anæsthesia lasts two to three minutes, and the patient is in another minute fully awake. The pulse remains unaltered; it sometimes becomes even fuller; the pupils are not influenced; vomiting, a stage of excitement, headache, and other bad effects are said to be rare. From 1 to 3 drachms (3 to 10 grammes) of the drug are usually sufficient for an administration. A slow or continued administration of large doses causes considerable excitation and prevents a narcosis altogether. Though bromide of ethyl is said not to influence the heart, it should not be administered to patients with heart-disease. Schmidt also recommends this drug for anæsthesia in removal of adenoids and tonsils, but he finds that he usually requires a larger quantity of the anæsthetic. He has never seen any serious after-effects; but vomiting, he says, takes place occasionally. He therefore prefers to operate early in the morning, and not to give solid food previous to the operation. Schmidt also mentions that frequently the mouth is tightly closed, through contraction of the masseter muscles, so that a gag becomes requisite.

#### THE MANAGEMENT OF FACE PRESENTATION.

DAVIS, of the Jefferson College, in the *Medical News* of July 14, 1894, tells us that the treatment best adapted to secure spontaneous labor in face presentations consists in retaining the membranes unbroken until the time of spontaneous rupture; in sustaining the patient's

strength and conserving her energies by suitable feeding, stimulation, and anodynes, and in placing the patient in such a posture as to favor the rotation of the chin anteriorly. When the face looks towards the left side of the mother's pelvis, she should lie upon the left side, her thighs flexed, and the uterus brought as nearly as possible with its long axis corresponding to the axis of her body during labor-pains. Should the foetal face look towards the right side of her pelvis, she should lie upon her right side. The relation of cause and effect that has been found to exist between obliquity of the uterus in the mother's abdomen and face presentation renders the maintenance of the uterus in a favorable posture during this complication a matter of considerable moment. It is quite possible in such cases for a face presentation to be spontaneously changed into an occipital one, and for the occiput even to rotate spontaneously to the front, if these precautions are observed. The administration of such substances as tend to maintain efficient uterine contractions is certainly indicated in these cases before the membranes rupture. As soon as dilatation is complete, the obstetrician is to choose between radical interference by version, or an effort by the methods of Badelocque and Schatz to correct the face presentation by converting it into an occipital one. His choice in this decision should depend upon the size and shape of the mother's pelvis, the comparative size of the foetal head, and the condition of the pelvic floor. When no disproportion exists between the head and the pelvis, and when the pelvic floor, although elastic and resistant, offers no undue obstacle to the mechanism of labor, it is certainly proper to allow the head, under good labor-pains and with good extension, to come down upon the pelvic floor in face presentation, and thus an opportunity be given for the mechanism of labor to proceed spontaneously. When, however, there is a disproportion between the head and the pelvis, as evidenced by pelvic proportions less than the average, ascertained by pelvimetry or a large foetal head, as ascertained by palpation and a thorough vaginal examination under an anæsthetic, the case becomes quite different.

The results of forcible delivery in face presentations under these conditions are anything but satisfactory and encouraging. The literature of the subject abounds in illustrations of difficult deliveries by forceps, craniotomy, and, in some cases, by version, in which the life of the child has been lost and the mother seriously injured. In the light of our present knowledge,

the duty of the obstetrician lies in completely changing the presentation, if the pelvis be roomy, by podalic version under anæsthesia by chloroform, or in so enlarging the pelvis that the mechanism of labor in face presentation can continue.

Podalic version for face presentation is familiar as an expedient, and is, in well-selected cases, a prompt and efficient method of treatment. Symphyseotomy is a procedure of too recent date to occupy an established place in these cases in the resources of obstetric art. His resources for considering this a rational procedure are as follows: Personal observation in four symphyseotomies done for disproportion between the head and the pelvis has led him to remark the decided increase of the oblique diameters of the pelvis that follows the separation of the pubic joint. In three of the four cases the foetal head presented in an occipito-posterior position, in two cases the right occipito-posterior, in one the left. In one of these cases the head presented by the right parietal bone before the pelvis was opened. Remembering the observation by many obstetricians that face presentations are often developed out of occipito-posterior positions, it seems to the author rational that any surgical procedure which should enlarge the oblique diameters of the pelvis, and which naturally favors the descent of the occiput in the arc of the pelvic curve lying between the sacro-iliac joint and the spine of the pubes, would afford rectification of this abnormal presentation. The three cases of occipito-posterior position following symphyseotomy were readily delivered without injury to mother or child.

Obstetricians are familiar with the facility with which faulty presentations of the head and shoulders may be remedied when two conditions are present: first, complete anæsthesia of the mother; and, second, a pelvis of good size in its oblique diameters. Reasoning from the author's experience in the cases cited, these conditions are present after symphyseotomy; and were the spontaneous progress of labor in this presentation to fail, he should much prefer, if the pelvis were of good size and the head not impacted, to perform podalic version; or, if the head were impacted and disproportion existed between the head and the pelvis sufficient to occasion difficulty in labor, the face presentation persisting, the writer should hope for a favorable result from symphyseotomy, converting the face presentation into a vertex presentation, and delivering the occiput in the manner most easily available after the pubic joint had been opened.

## TREATMENT OF TYPHOID FEVER.

In the *Medical News* for July 14, 1894, FISK, of Denver, describes his treatment as follows; he has certainly obtained very good results:

Absolute rest. -If the patient is seen early in the attack, as gauged by the absence of rose spots and other constitutional symptoms, the writer gives 5 grains of calomel at night, and follows it with a Seidlitz powder or some saline in the morning, and this is the only administration of calomel during the progress of the disease. He then puts the patient on an absolute milk diet, giving a tumblerful every three hours. As a rule, the writer is not influenced by the patient's ideas that it is impossible to take milk, but determines that by his own observation. When he finds this to be true, he has the milk peptonized, and sometimes changes to buttermilk. Extractive matters in the way of broths and extracts are not used, as they always seem to be harmful.

The turpentine mixture used is becoming well known in our hospitals and is meeting with great favor. It is constituted as follows:

R. Ol. terebinthinæ, ℥jii;  
Ol. ricini, ℥jii;  
Bismuth subnit., ℥iii;  
Mucil. acaciæ, q. s. ad ℥iv. M.

This must be shaken well, and a teaspoonful given in a little water twenty minutes after the goblet of milk.

The turpentine in this formula seems to be sufficient to keep the tongue moist and to stimulate the bowels; the castor oil keeps up the secretions, and the bismuth acts, as is well known, as a dressing to the inflamed mucous surface; the last also has a constipating effect, which is overcome by the administration of castor oil (from a dessertspoonful to a table-spoonful) every other morning. For the restlessness of the first few days, which is especially marked at night, he uses either 5 grains of Dover's powder, to be repeated once or twice during the night, or 10 drops of McMunn's elixir of opium, to be repeated once or twice, if needed. Water, iced, if preferred, is given freely; lemonade, not too sweet, is allowed, but not to conflict with the taking of the milk. Antipyretics, like antipyrin, antifebrin, acetanilid, phenacetin, and even quinine (for its antipyretic effects), are absolutely forbidden. Stimulation he reserves for necessity, as indicated by marked nervousness, a rapid and feeble pulse, and for the stage of convalescence. In both instances whiskey is preferred, care being taken to secure a good quality. Of heart-tonics, strophanthus is given rather a preference, and at times he resorts to hypo-

dermic injections of strychnine. He has never used the cold baths of Brand; at the utmost, sponging with tepid water seems to be sufficient, though not often employed.

He believes that great care must be taken in feeding a patient in the stage of convalescence. He thinks it is well to keep him on the milk diet indicated, increasing, however, the amount, if needed, for a week after the temperature has come to the normal. He then begins to feed very gradually, preferring animal to starchy diet..

It will be seen that the methods employed are quite different from those advocated by others. The strict adherence to a milk diet is, of course, nothing new, and as far back as 1866 we find Dr. Cotting, of Roxbury, Mass., reporting in the London *Lancet* three hundred and seven cases of typhoid fever treated without drugs of any kind and a mortality of only ten per cent.

Professor Osler, in his recent publication, says, "Milk is the staple article of diet, of which from 3 to 4 pints are given in the twenty-four hours." This is about the amount the writer used.

Dr. Hutchinson says, "Milk as an article of diet is unquestionably to be preferred to all others in typhoid fever."

The administration of turpentine was advocated by the late Professor George B. Wood and indorsed by Dr. Hutchinson, though the dose employed was greatly in excess of that found in the turpentine mixture.

## THE COLD POULTICE AS AN ANTI-PYRETIC IN HIGH GRADES OF FEVER.

BEDFORD BROWN, in the *Virginia Medical Monthly* for September, 1894, advises the use of the cold poultice. He orders that a sufficient quantity of flaxseed meal to prepare a poultice of suitable dimensions be placed in a common earthen bowl, and over this is poured boiling water, while the meal is constantly stirred with a large spoon until cooked to the consistency of soft mush. This material is then spread on a piece of soft cotton cloth, for an adult, about eighteen inches long and twelve or fourteen wide, or sufficiently long to cover the entire abdomen, from the pubis upward, extending at least half-way up the chest, well over the cardiac region, so as to fully cover the heart and half of the chest. This poultice is now covered with another piece of cotton of corresponding dimensions. After being spread and covered, the entire surface to be applied

to the person is frequently besprinkled with ice-water until its temperature goes down to 68° or 70° F., when it is ready for application. At this point the author suggests that the poultice be not spread too thick, as in that case it would prove oppressive to the patient.

The poultice as thus prepared is applied over the chest, from above the cardiac region to the pubis. In the writer's experience with it, which dates back fifteen years, he has never known it produce shock to the nervous system or discomfort to the patient. On the contrary, patients with high fever, who have learned its advantages, will often request it when they feel sensations of rise of temperature. Its work, different from that of the cold bath, is accomplished slowly, gradually, gently, and effectually. The cold poultice applied in this way is a good substitute for the cold bath, without its many disadvantages, dangers, and difficulties of application.

In cases of fever, with a dangerous degree of hyperpyrexia, say 106° or 106.5° F., with delirium, insomnia, constant restlessness, contracted pupil, scanty, high-colored urine, these symptoms clearly indicate that this intense degree of temperature is exerting a destructive influence on the great nervous centres,—the brain and spinal cord; and if prompt measures are not taken to reduce this hyperpyrexia to a safe degree, the brain and spinal cord will be overwhelmed in hopeless ruin. This can only be accomplished either by the cold bath, internal antipyretics, or the cold poultice. In certain cases in the author's practice the latter measure, applied over the entire spinal column, from the cervical vertebræ to the sacrum, with these symptoms, has exerted a marvellous effect in relieving the nervous system, in subduing inordinate nervous erethism, relieving delirium and restlessness, and in promoting sleep.

In a case of this kind, during a relapse from a four weeks' illness, where the temperature approached 106° F., pulse 130, utter sleeplessness, and constant restlessness, a long poultice, at 70° F., was applied from above the cardiac region to the pubis; another, at the same temperature, ten inches wide, was applied over the nucha to the sacrum, and the head having been shaved, an ice-bag was applied over the head. In two hours there was a reduction of two degrees; in twelve hours a reduction of five degrees, with copious warm perspiration, with the result of refreshing sleep, nervous composure, relief of delirium; and reduction of the pulse to 100. On one or two occasions subsequently, when there was manifested a disposition of these symptoms to return, the same remedies were applied, with identical

results, and under the usual treatment the case terminated in recovery.

In the treatment of acute peritonitis the powers of the cold poultice have not been tested by him as an antipyretic and antiphlogistic. He believes that in this class of cases poultices, at a temperature of 70° F., applied systematically at intervals of one hour, would exert a beneficial influence.

There is a certain degree of art to be observed in the preparation of these poultices. They should not be spread so thick and heavy as to weight down the patient and cause a sense of oppression; not over a quarter of an inch in thickness, and then reduced to a uniform temperature, as tested by the clinical thermometer. In cases of temperature not exceeding 102° F., Brown often orders a cold poultice at first made with hot water, and then permitted to cool either by the atmosphere or application of ordinary hydrant- or pump-water, and obtains excellent results.

#### *SOME POINTS IN THE TREATMENT OF TYPHOID FEVER.*

In the *Medical Press and Circular* for August 22, 1894, BROADBENT writes on this topic. In intestinal hemorrhage the treatment on which the author has come to rely is the placing of a large ice bag over the right iliac fossa, the administration of a full dose of some liquid preparation of opium, and the subcutaneous injection of ergotin. 10 or 15 minims of turpentine may also be given every three or four hours. The object of the opium is to paralyze the bowel. The blood poured out into the intestinal canal excites peristalsis, and the peristalsis, in turn, tends to prevent the formation of clot on the bleeding surface, which might seal up the vessels. It must, therefore, be arrested; and it is because opium given by the mouth appears to effect this better than morphine hypodermically that this method of administration is preferred. ½ drachm of laudanum, or its equivalent of liquor opii, may be given at once. Opium, again, seems to have a certain sustaining power. Astringents, supposed to act directly on the bleeding vessels, are useless; long before they have traversed the twelve or sixteen feet of bowel to reach the ulcers they will have expended their power of coagulating blood or astringing tissues. When the medical man lives at a distance from the patient, the nurses should be provided with an ice bag, laudanum, and hypodermic pellets of ergotin, and have instructions to employ them immediately on the occurrence of serious hemorrhage.

every other day, or oftener. For a child one year old, the dose is from  $\frac{1}{16}$  to  $\frac{1}{8}$  grain in distilled water every evening at bedtime; for a child from two to three years old, the dose is from  $\frac{1}{8}$  to  $\frac{1}{4}$  grain [!—ED.]. By administering the alkaloid gradually—feeling one's way, as it were—no untoward accident should be anticipated. Adults, however, seem to be more susceptible to its influence than children. A good precaution is to remain with the patient from fifteen to twenty minutes after exhibiting the medicine, and when given to children, mothers should be instructed to use a little red wine or claret should the child show signs of weakness. He has seen only one man that complained of marked weakness after a hypodermic injection, and two patients were severely salivated. The first was restored by a little claret, and the other two were relieved by holding ice in the mouth.

It seems that in order for pilocarpine to be palliative or curative in acute or chronic urticaria, it must make the patient sweat freely. Free perspiration is promptly produced in an adult, and with a comparatively smaller dose than in a child, and herein is the guide to increase or diminish the dose.

To sum up:

1. Pilocarpine in urticaria is the drug *par excellence*.
2. Be sure of the diagnosis.
3. Before instituting your treatment, clear off complicating lesions.
4. Get a pure drug.
5. Have patience.
6. Push the drug to the point of tolerance.

In two cases of jaundice where the itching was quite annoying, pilocarpine proved useful; it also allays the burning and tingling sensations in other affections of the skin.

#### TREATMENT OF CYSTITIS IN WOMEN.

While in men the cause of cystitis is nearly always due to prostatic or urethral affections, in women it is due to inflammation following labor or operative traumatism. It may be acute or it may be chronic, and the following formulæ proposed by LUTAUD (*Revue Obstetricale et Gynécologique*, August, 1894) may be found useful in the acute form:

Morph. muriat., gr.  $\frac{1}{6}$ ;  
Extract, hyoscyamus, gr.  $\frac{1}{8}$ ;  
Coca butter, gr. xl.

For one suppository; 3 or 4 in twenty-four hours.

Irrigations of laudanum are soothing.

For the insomnia, chloral given as an injection:

Chloral hydrate,  $\mathfrak{z}$ i;  
Yellow of one egg;  
Water or milk,  $\mathfrak{f}\mathfrak{z}$ iiss.

The hypodermic injection of morphine (the patient never being permitted to make the injection herself) is still the best means of calming the paroxysms of pain. Cataplasms, baths, and hypogastric fomentations are useful. Topical applications in the vagina assist in allaying inflammation about the neck of the bladder:

Camphorated lanolin,  $\mathfrak{z}$ ii;  
Extract of belladonna,  $\mathfrak{z}$ i.

Saturate a tampon with the above and introduce night and morning into the vagina.

When the pain is intense, apply in the same way—

Muriate of cocaine, gr. xv;  
Distilled water,  $\mathfrak{f}\mathfrak{z}$ vi.

Internally, for the acute form:

Oxalic acid, gr. viii;  
Distilled water,  $\mathfrak{f}\mathfrak{z}$ iii;  
Syrup bitter orange-peel,  $\mathfrak{f}\mathfrak{z}$ i.

A dessertspoonful every four hours.

*Chronic Cystitis*.—Here the general as well as the local treatment should be employed, and only when the inflammatory phenomena and pain have subsided should one commence the irrigations.

The mild antiseptics hold first rank, as—

Boric acid,  $\mathfrak{z}$ i;  
Sodium bichlorate,  $\mathfrak{z}$ iss;  
Distilled water, Oii.

$\mathfrak{z}$ i to  $\mathfrak{z}$ ii are injected rapidly and allowed to flow away.

If the bladder is still irritable, use smaller amounts.

Injections of silver nitrate are but rarely employed; instead, iodoform is preferred, especially in cystitis of gonorrhoeal origin.

In such cases an injection of the boric-acid solution above mentioned is given; then follows an injection of 5 ounces of tepid water, containing a coffeespoonful of the following emulsion:

Iodoform powder, 30 parts;  
Glycerin, 40 parts;  
Distilled water, 20 parts;  
Gum tragacanth, .25 part.

Pyoktanin is also recommended in gonorrhoeal-cystitis, in the proportion of,—

Pyoktanin, gr. xv;  
Boiled and distilled water, Oii.

Inject morning and evening for from ten to fifteen days.

Constitutionally, in gonorrhoeal cystitis, extract of pichi is proposed by Wyman, and is thus employed:



Extract of pichi, 10 parts;  
Tr. cannabis indica, 2 parts;  
Lime-water, 90 parts.  
A dessertspoonful every four hours.

Or the following may be employed:

Bromide of ammonium, 10 parts;  
Tr. hyoscyamus, 5 parts;  
Fluid extract buchu, 10 parts;  
Distilled water, 60 parts.  
A coffeespoonful every four hours.

If there is pus in the urine, the following is useful:

Benzoic acid, 1 part;  
Orange-flower water, 50 parts;  
Boiled water, 900 parts;  
Sugar, 100 parts.  
Take by the glass between meals.

#### ICHTHYOL-ZINC PASTE AS A TREATMENT FOR ECZEMA OF THE FEMALE GENITALS.

In an article on eczema of the mucous membranes, VON SEHLEN (*Monatshfte für Praktische Dermatologie*, July, 1894) says that the inside of the vaginal sheath is especially subject to eczema, which continues outward to the labia, causing excessive itching. For the relief of this condition he proposes the following:

Ichthyol ammon.,  $1\frac{1}{2}$  to 2 parts;  
Amyli tritici,  
Zinc flor, of each, 12 parts;  
Vaseline, 25 parts.  
M. et fiat pasta.  
Sig.—Zinc-ichthyol paste.

Also calomel ointment of a high per cent. will often be useful in preventing the intense itching.

#### TREATMENT OF FURUNCULOSIS.

W. VAN HOORN (*Monatshfte für Praktische Dermatologie*, July, 1894) for many years has used the following method in cases of multiple furuncles, based upon general disinfection of the skin and isolation and disinfection of the affected area.

A general bath in warm water and soft soap is given; then the furuncles and the region about them are washed with a 1 to 1000 sublimate solution, dried with wadding (Bruns), and over the furuncle is applied a mercury-carbol mull plaster, after which the patient puts on a fresh suit of underclothing. Each day, or twice a day, the plaster is renewed; any soft points or perforations are lightly pressed, and contents washed away with the sublimate

solution. If there is no fluctuation, the infiltrate is rapidly reabsorbed; but if fluctuation is clear, perforation is the rule, but the healing is much hastened.

What is of especial importance is the non-appearance of new groups of furuncles, and when a single one now and then does break out, it is quickly reabsorbed.

#### TREATMENT OF PUERPERAL INFECTION.

BONNAIRE thus treats puerperal infection (*La Tribune Médicale*, July, 1894).

In all manipulations before, during, and after labor, scrupulously cleanse everything, from hands and instruments to bedlinen, that in any way may come in contact with the genitals of the patient.

Those who claim that the cause is always hetero-infection rely upon asepsis alone, but those who claim that the source of the microbes may be both hetero- and auto-infection rely upon antiseptics.

The author believes with others that auto-infection may be occasioned by the streptococcus, staphylococcus, gonococcus, or the colon bacillus, etc., and for that reason proposes antiseptics.

To avoid the entrance of the microbes, and their destruction when present after labor, a very feeble stream should be used in washing out the vagina, and the olive-tipped glass instrument used for the injections should be perforated only on the side.

Great care should be exercised that the canula contains no air, and from 3 to 4 quarts of a solution of sublimate (1 to 10,000) should be injected.

Carbolic acid is also a good antiseptic to use in these cases, in strength of at least two-per-cent. solutions.

Sulphate of copper is also a good drug, but possesses the same danger as the carbolic, in that they may both cause rapid poisoning when absorbed.

Bonnaire especially recommends the iodide and permanganate of potassium, iodoform, and phenosalyl. The following is an excellent way of using iodine:

R. Iodide of potassium,  $\text{ʒiiss}$ ;  
Metallic iodine,  $\text{mxxlv}$ ;  
Water,  $\text{ʒiijii}$ .  
Mix the whole in a quart of water.

Potassium permanganate is a good disinfectant, but less energetic than iodine.

in moderate doses, the remedy is most frequently valuable and non-toxic. The author's plan is to give never more than 10 grains, or even 5 grains repeated frequently, say every hour, and if temperature after a few hours shows no sign of fall, the drug should be stopped and recourse had to some other treatment.

Salicinum is a safe and reliable antipyretic; especially in those attacks which exhibit so-called rheumatic symptoms it is a perfect substitute for salicylate of sodium, without any of its dangerous properties.

Phenacetin he has used much and successfully, especially in India, but it is not so sure as antipyrin, and is much more liable to cause unpleasant and even dangerous symptoms. Care should be taken not to employ it in patients with organic heart-disease.

Antifebrin has been lauded as an antipyretic. His experience and that of others does not approve its use, as it is exceedingly liable to cause cardiac troubles and cyanosis.

Aconite in the form of tabloids of tinctura aconiti is reliable, which is more than can generally be said of the British Pharmacopœia tincture, and is undoubtedly the most successful remedy we have in both Indian and African remittents. It can be used when even antipyrin fails, as an anodyne, antipyretic, and analgesic; it is unsurpassed in these complaints by any other drug, and used in remittent fever may be termed "our sheet-anchor." It is poisonous, truly, but its control of the neuro-vascular mechanism is great, and it is, besides, the most powerful drug we have available in this class of disease.

Dover's powder, pulv. ipecac co., may be classed partly as a sudorific anodyne and partly as an antipyretic, and may be given, starting from the initial stage of fever, every hour in 5-grain doses.

Warburg's tincture, an empiric formula (containing opium, quinine, and aromatics), is without its equal in persistent and protracted agues, and can be used, as the author has done before antipyrin, etc., were known, with striking success in some of the worst forms of fever. It is also prophylactic against the return, when expected, of intermittent attacks. Those patients who can take it readily can be sure of great benefit accruing from its occasional use, but its taste is nauseous, unless taken in the tabloid form, quickly swallowed (dose,  $1\frac{1}{2}$  to 3 drachms). Should the administration of any or all of the above, given in succession, prove of no avail, our last resource, in strictly speaking antipyretic (it might here be almost called revulsant) treatment, is the cold bath or cold

wet pack. These, in skilful hands, have saved many lives, and even in the hands of tyros marked success has resulted.

Potassii bromidum is exceedingly useful in 10-grain doses, when severe headache marks initial stage; it is again useful in delirium, phrenetic symptoms which occur in the sanguine temperament, especially in those giving to overeating and heavy drinking. When vomiting supervenes, and this is common, especially in dysenteric and choleraic remittents, almost all drugs must be given hypodermically, as there is continuous vomiting and diarrhœa every few minutes. In one case the writer made considerable impression on the patient by repeated doses of chlorodyne in one of these choleraic attacks, giving  $\frac{1}{2}$ -drachm doses. Some of these were rejected, but some were retained, and the patient recovered, although his pulse was subnormal four hours after commencement of attack."

Hazeline, a distilled product from twigs of witch-hazel, is an almost unailing hæmostatic; it also seems to act as an astringent to intestinal mucous membranes. It is pleasant to take internally, and can be given with good effect in hæmaturia, hæmatemesis, etc., which are frequent in pernicious attacks, both intermittent and remittent, the dose being 1 to 2 drachms. Should this fail, however, inject subcutaneously  $\frac{1}{10}$  grain of ergotin in citrat.; this might be a specific. Ice, when it can be obtained, is also extremely useful, and also in acute dysentery.

Apomorphine hydrochlorate, in doses of  $\frac{1}{10}$  grain, would cut short an attack of bilious remittent by inducing vomiting. It is sometimes, but rarely, a good practice, vomiting being often only too persistent when once established.

Digitalis tincture has proved useful where heart shows signs of failure, and can be combined with advantage with liquor ferri perchloridi.

*Calomel.*—In one dose, from 5 to 10 grains, given at beginning of fever, when there is constipation.

*Methylene-Blue.*—Thayer, in 1892, tried small doses (2 or 3 grains for a dose) on several patients in intermittent fever, with satisfactory results; the drug in no wise gave rise to any unpleasant symptoms, and a cure (temporarily, at all events) resulted. Dr. Pucci says clinically he believes that quinine is responsible for many sequelæ of fever and for the development also of those ictere hæmaturic forms which are so fatal, whereas he used methylene-blue with far different and more successful results. Dr. Rosin confirms this.

Arsenous acid is useful in obstinate intermittents which are often rendered worse by quinine; dose,  $\frac{1}{100}$  grain of tabloids of acid arsenosi.

Quinine (quinine bisulphas) has been up till quite a recent date regarded as a specific, especially in the tropical forms of malarial fever, by even the most eminent and experienced practitioners. Its value as a specific in malaria is confirmed by the dicta of Laveran, Golgi, Hehir, Binz, Manson, and Baccelli (who considers it more powerful as a remedy when subcutaneously injected, and more likely to act directly on the "plasmodium malarie"). Dr. Beaven Rake says the intracorporeal pigmented bodies are specially characteristic of acute forms of malaria, and are readily affected by quinine. This can hardly be substantiated by proof adequate against accumulated clinical evidence to the contrary from Europe (Rosin and Pucci), from equatorial Africa (Parke), and from India, wide enough fields for investigation. In his own clinical experience of hundreds of cases of tropical malaria, extending over years, Forbes finds that quinine given in acute malaria is almost as deadly as the disease.

#### THE HYPODERMIC ADMINISTRATION OF MERCURY.

The number of compounds of mercury which have been used by injection into the tissues is very large, and the author formulates the following rules for their safe employment:

All irritant or caustic preparations are, of course, inadmissible. The liquid injected must be chemically pure and sterile. The syringe must be sterilized in all its parts, and an unoxidizable needle (such as iridized platinum), not less than one and a half inches long, must be used. All injections must be given deeply into the tissues, the needle being inserted perpendicularly to the surface.

The lumbar portion of the back and the gluteal region are the best positions. Care must be taken not to introduce the syringe into a vein. Subsequent injections ought to be two to two and a half inches distant from a previous one.

The interval between each injection varies with the effect produced and the preparation employed,—from twice a day with small quantities of soluble preparations to once a month with large injections of insoluble preparations, such as calomel.

*Soluble Injections.*—Corrosive sublimate.

Corrosive sublimate, 1 part;  
Chloride of sodium, 6 parts;  
Sterilized water, 100 parts.

A Pravaz syringeful (about 15 minims) to be injected every day.

To avoid such frequent injections, M. Luke-siewicz injects  $\frac{1}{2}$  to 1 syringeful of a stronger solution every four or eight days. Corrosive sublimate can also be dissolved in sterilized oil, so that fifteen minims contain one-sixth of a grain, which is the usual dose.

Periodide of mercury is also well borne and causes little pain.  $\frac{1}{16}$  grain may be injected, dissolved in 15 minims of sterilized oil, and repeated every day or every other day, as the case may require.

*Succinimide of Mercury.*— $\frac{1}{80}$  grain in sterilized water may be given every day.

Sozoiodolate of mercury is very active, but causes much pain. The following is Schwimmer's formula:

Sozoiodolate of mercury, 8 parts;  
Iodide of potassium, 14 parts;  
Distilled water, 100 parts.

About 6 minims are injected every week, and the dose may be carefully increased.

*Insoluble Injections.*—Calomel.

Sublimated calomel, 1 part;  
Liquid vaseline, 10 parts.

15 minims to be injected every fifteen days.

Yellow oxide may be given in the same dose and manner as calomel.

Gray oil is less active than calomel.

Mercury (purified), 20 parts;  
Ethereal tincture of benzoin, 5 parts;  
Liquid vaseline, 40 parts.

$1\frac{1}{2}$  to 3 minims are injected every eight days.

Thymolate of mercury, 1 part, mixed with 10 parts of liquid vaseline, and 7 to 15 minims given every eight days.

Salicylate of mercury may be used like the thymolate.—MANNIAC, abstract from the *Medical Chronicle*, September, 1894.

#### SYMPHYSEOTOMY FOR THE RELATIVE INDICATION, WITH COMPLICATIONS.

DAVIS contributes to the *Boston Medical and Surgical Journal* of August 23, 1894, a paper upon this interesting topic. He thinks that in undertaking symphyseotomy in women older than thirty the operator must not trust wholly to the knife; this is the second case in the author's experience in which a condition of partial ossification has resisted the Galbiati

knife and probe-pointed bistoury. The occurrence of thrombosis during convalescence may be explained by the dislodgement of septic thrombi in the uterine sinuses, although it is not perfectly clear how such infected thrombi could cause no disturbance before the patient turned. A more rational explanation to the writer lies in mechanical injury in the sudden turn done to vessels predisposed to thrombosis by long recumbent posture, a retention dressing about the hips, and recovery from a surgical procedure of moderate severity. There was no evidence of abscess in any part of the thighs, which might readily have followed septic thrombosis. This illustrates well the importance of good nursing after symphyseotomy, without which the writer's patient's complicated labor would have been far more dangerous and trying.

The patient's pelvic measurements were such that delivery, possibly with forceps, was all that was anticipated; symphyseotomy was performed for the relative indication. The case impressed upon the operator and upon the class in clinic the futility of attempting to deliver a living child by forceps without symphyseotomy, when a relative disproportion in size between head and pelvis sufficient to prevent engagement exists.

#### *NOTE ON THE PAST AND FUTURE OF VENESECTION.*

When to let blood has from the earliest days of medicine been a burning question. The Saxon Leeches were divided on it, their difficulty being the phase of the moon most suitable for the operation. Two or more centuries later, rival schools of medicine held different views as to which side the patient should be bled, some contending that the side on which the inflammation existed was the proper one for venesection; the opponents of this view of the site for bleeding adduced many and learned arguments to prove that venesection was not efficacious unless performed on the side opposite to the inflammation. All this time, however, no physician questioned the value of venesection. The first shock to the medical profession practising this time-honored custom came from a layman, Alaric Renc le Sage, who caricatured the Sagredo of Espinal by the great doctor of Valladolid, Sangrado, who informed his pupil, Gil Blas, that "other physicians make the healing art consist in the knowledge of a thousand different sciences, but I go a shorter way to work, and spare the trouble of studying pharmacy, anatomy, bot-

any, and physic. Know, then, that all which is required is to bleed the patient copiously."

Patients appear to have enjoyed the operation. We read that Mary Anne, daughter of Don Jerome, of Quito, was bled, according to M. Guerin, five hundred times in the space of two years.

In the British Islands phlebotomists travelled the country, thatching houses, spaying sows, and bleeding. A spring and autumn venesection was considered a necessity. Young and old underwent the operation. Nor was the custom confined to this country. Italian families kept their bleeding vessels, and it was an accident of phlebotomy that gave Anel the opportunity for testing his operation for aneurism.

The operation was grossly abused for ages, and, as a consequence, the medical profession and the public became prejudiced against the lancet; it fell into disuse, and thus a useful and efficient therapeutic agent was disregarded.

We are now, however, coming to recognize that venesection has a place in practical medicine, and that the abstraction of a few ounces of blood is sometimes one of the most efficacious measures we can adopt. There is a general consensus of opinion in favor of a careful clinical study of the value of venesection.

The paper on venesection read by Dr. Pye-Smith before the Royal Medical and Surgical Society, in January, 1891, attracted much attention, and in the discussion that followed it was felt that Sir George Humphry voiced the opinion of every thoughtful member of the profession, "that bleeding was one of the most important agents in the treatment of disease." That, as stated by Dr. Pye-Smith, "the accumulation of experience would soon lead to the formation of an opinion as to the cases in which this measure was desirable," will meet with approval of the great majority of the profession at home and abroad, is noticeable from the discussions and papers on the subject appearing in foreign journals.

In the Royal Academy of Medicine in Madrid, Señor Iglesias recently made venesection the subject of a paper, which produced an animated discussion, in which Señor Palido fairly stated that not from any bad results of the operation, but from its abuse it became discredited, an opinion which re-echoes the view of the French Academy.

The operation also forms the subject of a valuable paper by Dr. Stone, in a late number of the THERAPEUTIC GAZETTE, in which, after reviewing at length the conditions which call for venesection, he concludes that he "sin-

cerely hopes that he has convinced some of his audience of the great therapeutic value of the remedy."

Sooner or later the lancet will again come to be a valued weapon in contending with inflammatory diseases.—FRY, in the *Medical Press and Circular*, July 4, 1894.

*THE TREATMENT OF CERTAIN SYMPTOMS OF CROUPOUS PNEUMONIA, PARTICULARLY IN ADULTS.*

ROBINSON has written an able clinical paper with this title. We append extracts from the more important passages, believing the article to be well worth careful study.

The two symptoms in connection with the first stage of croupous pneumonia which are of special interest as regards the efficacy of treatment are pyrexia and pulmonary congestion.

Personally, the writer has not thought it wise to give the modern antipyretic drugs, except in occasional doses. Of these, phenacetin is the most satisfactory. It diminishes fever somewhat and promotes sleep and the general comfort of the patient, without great risk of depression in a marked degree. Acetanilide, in doses of 2 to 3 grains, lowers temperature a degree or two, but without promoting the comfort of the patient or producing sleep. In doses of 5 grains or more it is evidently depressing. Neither of these drugs should be given continuously, and, as a rule, only when the temperature is over 103° F. Robinson relies very much more upon the use of spirits of Mindererus, citrate of potassium, and sulphate of magnesium to reduce temperature by action on the different excretories of the economy—skin, kidneys, and bowels—than upon the former remedies. He believes still that 3 to 5 grains of quinine every four to six hours tend to diminish fever, while strengthening somewhat the heart, through diminution of local hyperæmia of the lungs, promotion of absorption of the fibrino-corpuscular exudation into the alveoli, and a possible antiseptic action on the blood itself.

As to the use of cold sponging, the ice coil, cold pack, or cool baths for the purpose of reducing temperature, he has come to the conclusion that they do not act in this manner with any special efficacy, as they are usually employed. In this country, at least, treatment of croupous pneumonia with cold baths has not yet become frequent. Occasionally, when the temperature passes beyond 104° F., and is accompanied with delirium, rapid and feeble pulse, frequent respiration, and other

evidences of intense poisoning or adynamia, the tub bath at a temperature of 80° or 90° F. may be usefully employed. Not that the temperature always falls much after the use of these baths, but, combined with continuous frictions during the bath, they certainly quiet delirium, awaken latent nervous energy, and stimulate capillary circulation over the surface of the body.

While these effects are customary, according to those who have made frequent use of cold tub-baths in the treatment of croupous pneumonia, until lately the author has been very doubtful as to their beneficial action. More than once he has seen bad rather than good results follow immersion. The patient has become more cyanosed, dyspnoea more marked, and, if anything, the pulmonary congestion more intense. He is inclined to believe that sponging is a decidedly wiser method than the tub-baths in many cases, if it be combined, too, with friction to help improve the patient's condition through its combined action in lowering the temperature slightly and in increasing nervous energy.

At St. Luke's Hospital the writer has had the opportunity to observe and carefully inquire into the use of aconitine when given at this stage, and often at a later period, with respect to its action on the temperature and pulse. After many trials of this drug, he has been led to believe that its use by itself may often be injurious by diminishing the energy of cardiac contractions, so that they are with some difficulty again strengthened. Even when combined in its use with digitalin, or digitalin and strychnine, it is not free at times from grave objections. Aconite or aconitine seems to act mainly by reducing the tension of the radial pulse and lessening the number of heart-beats, while it diminishes their strength by its paralyzing effect on the ganglia and nerves controlling cardiac contractions. This poisonous effect of aconite upon the heart through its motor ganglia may be shown by direct applications of the drug. As a result of these, the heart is slowed in a very threatening manner, and may stop in diastole.

The author has never seen any drug act as well in this stage of pneumonia as small repeated doses of antimony. The salt he has given most frequently is not tartar emetic, but kermes mineral, or the oxysulphuret of antimony. He has given it in a mixture with syrup of gum and orange-flower water, usually in doses of  $\frac{1}{2}$  grain every two hours, or every hour for a while; employed in this manner, fever and pulmonary congestion diminish at times in a very obvious manner. Expectora-

either paints the parts to be operated upon with a solution of antipyrin (2 parts), cocaine (1 part), and water to 10 parts; or, better still, paints with a ten-per-cent. cocaine solution, and injects a few minutes after in two or three places, under the mucous membrane in each place, 2 minims of a fifty-per-cent. antipyrin solution. Wroblowski was able to remove in this way, painlessly, lamellæ of a deviated nasal septum, operations which lasted half an hour; and the author confirms Wroblowski's statement that not only tonsils and adenoid vegetations may in this way be removed without pain, but that there is no pain afterwards. Wroblowski applies these solutions with similar good results in removal of the lingual tonsil,—a very painful procedure,—and after injecting a few drops of the antipyrin solution under the mucosa with a Heryng's laryngeal syringe, he is able to do painlessly prolonged laryngeal operations. The same application he has made in cases of tubercular ulceration of the larynx where deglutition has become painful and for solid substances impossible. In a patient of this sort, who had not been able to take solid food for about six months, one hour after the injection of a fifty-per-cent. antipyrin solution into the region of each arytenoid body (one division of a Heryng's syringe, equal to  $1\frac{1}{2}$  grains of antipyrin, being applied in each place), the patient was able to eat a beefsteak. Soon after the injection a slight burning sensation is felt. This lasts about fifteen minutes; then the local anæsthesia commences, and the loss of sensation lasts from six to twelve hours. The ulcerative tubercular process itself seemed to be favorably influenced by these injections. The author is applying at present, with similar favorable results, a paint (ten per cent. cocaine and thirty per cent. of antipyrin) twice a day to the larynx of a tubercular patient, in whom the deglutition of the saliva even had become extremely painful, and who is now able to take food and to swallow for six to eight hours after each application.

The local application of strong solutions of antipyrin to mucous membranes deserves, therefore, a much wider trial.

Where general anæsthesia is indicated for the removal of adenoids, attention might also again be drawn to bromide of ethyl, so ardently recommended by Hollaender at the Berlin International Medical Congress. This fluid,  $C_2H_5Br$ , has its boiling-point at  $105^\circ F.$ ; it therefore evaporates quickly; its odor is similar to chloroform. It was first used as a general anæsthetic by Thomas Nunneley, of Leeds, in 1869, who for some time did all his eye opera-

tions at the Leeds Infirmary with this anæsthetic. Since then it has been extensively used both in America and in France, mostly for dental operations. Unfortunately, several deaths have been recorded, but Hollaender and others ascribe these to the use of an impure preparation, as until recently it was somewhat difficult to obtain the pure drug, "ethyl bromide,"  $C_2H_5Br$ , owing to the frequent admixture of ethylene bromide,  $C_2H_4Br_2$ , a very poisonous drug. Hollaender administers ethyl bromide with an Esmarch chloroform inhaler, holding it closely over the mouth and nose to exclude air, and continually dropping the fluid on until anæsthesia is established, which takes place in thirty to forty seconds, and frequently in ten to twenty seconds. The anæsthesia so obtained is not complete, but is sufficient for small operations. The cornea reflex is not abolished, and it is not advisable to wait for its abolition, but only until the uplifted arm falls powerlessly down. Hollaender then at once proceeds to operate; the anæsthesia lasts two to three minutes, and the patient is in another minute fully awake. The pulse remains unaltered; it sometimes becomes even fuller; the pupils are not influenced; vomiting, a stage of excitement, headache, and other bad effects are said to be rare. From 1 to 3 drachms (3 to 10 grammes) of the drug are usually sufficient for an administration. A slow or continued administration of large doses causes considerable excitation and prevents a narcosis altogether. Though bromide of ethyl is said not to influence the heart, it should not be administered to patients with heart-disease. Schmidt also recommends this drug for anæsthesia in removal of adenoids and tonsils, but he finds that he usually requires a larger quantity of the anæsthetic. He has never seen any serious after-effects; but vomiting, he says, takes place occasionally. He therefore prefers to operate early in the morning, and not to give solid food previous to the operation. Schmidt also mentions that frequently the mouth is tightly closed, through contraction of the masseter muscles, so that a gag becomes requisite.

#### THE MANAGEMENT OF FACE PRESENTATION.

DAVIS, of the Jefferson College, in the *Medical News* of July 14, 1894, tells us that the treatment best adapted to secure spontaneous labor in face presentations consists in retaining the membranes unbroken until the time of spontaneous rupture; in sustaining the patient's

strength and conserving her energies by suitable feeding, stimulation, and anodynes, and in placing the patient in such a posture as to favor the rotation of the chin anteriorly. When the face looks towards the left side of the mother's pelvis, she should lie upon the left side, her thighs flexed, and the uterus brought as nearly as possible with its long axis corresponding to the axis of her body during labor-pains. Should the foetal face look towards the right side of her pelvis, she should lie upon her right side. The relation of cause and effect that has been found to exist between obliquity of the uterus in the mother's abdomen and face presentation renders the maintenance of the uterus in a favorable posture during this complication a matter of considerable moment. It is quite possible in such cases for a face presentation to be spontaneously changed into an occipital one, and for the occiput even to rotate spontaneously to the front, if these precautions are observed. The administration of such substances as tend to maintain efficient uterine contractions is certainly indicated in these cases before the membranes rupture. As soon as dilatation is complete, the obstetrician is to choose between radical interference by version, or an effort by the methods of Badelocque and Schatz to correct the face presentation by converting it into an occipital one. His choice in this decision should depend upon the size and shape of the mother's pelvis, the comparative size of the foetal head, and the condition of the pelvic floor. When no disproportion exists between the head and the pelvis, and when the pelvic floor, although elastic and resistant, offers no undue obstacle to the mechanism of labor, it is certainly proper to allow the head, under good labor-pains and with good extension, to come down upon the pelvic floor in face presentation, and thus an opportunity be given for the mechanism of labor to proceed spontaneously. When, however, there is a disproportion between the head and the pelvis, as evidenced by pelvic proportions less than the average, ascertained by pelvimetry or a large foetal head, as ascertained by palpation and a thorough vaginal examination under an anæsthetic, the case becomes quite different.

The results of forcible delivery in face presentations under these conditions are anything but satisfactory and encouraging. The literature of the subject abounds in illustrations of difficult deliveries by forceps, craniotomy, and, in some cases, by version, in which the life of the child has been lost and the mother seriously injured. In the light of our present knowledge,

the duty of the obstetrician lies in completely changing the presentation, if the pelvis be roomy, by podalic version under anæsthesia by chloroform, or in so enlarging the pelvis that the mechanism of labor in face presentation can continue.

Podalic version for face presentation is familiar as an expedient, and is, in well-selected cases, a prompt and efficient method of treatment. Symphyseotomy is a procedure of too recent date to occupy an established place in these cases in the resources of obstetric art. His resources for considering this a rational procedure are as follows: Personal observation in four symphyseotomies done for disproportion between the head and the pelvis has led him to remark the decided increase of the oblique diameters of the pelvis that follows the separation of the pubic joint. In three of the four cases the foetal head presented in an occipito-posterior position, in two cases the right occipito-posterior, in one the left. In one of these cases the head presented by the right parietal bone before the pelvis was opened. Remembering the observation by many obstetricians that face presentations are often developed out of occipito-posterior positions, it seems to the author rational that any surgical procedure which should enlarge the oblique diameters of the pelvis, and which naturally favors the descent of the occiput in the arc of the pelvic curve lying between the sacro-iliac joint and the spine of the pubes, would afford rectification of this abnormal presentation. The three cases of occipito-posterior position following symphyseotomy were readily delivered without injury to mother or child.

Obstetricians are familiar with the facility with which faulty presentations of the head and shoulders may be remedied when two conditions are present: first, complete anæsthesia of the mother; and, second, a pelvis of good size in its oblique diameters. Reasoning from the author's experience in the cases cited, these conditions are present after symphyseotomy; and were the spontaneous progress of labor in this presentation to fail, he should much prefer, if the pelvis were of good size and the head not impacted, to perform podalic version; or, if the head were impacted and disproportion existed between the head and the pelvis sufficient to occasion difficulty in labor, the face presentation persisting, the writer should hope for a favorable result from symphyseotomy, converting the face presentation into a vertex presentation, and delivering the occiput in the manner most easily available after the pubic joint had been opened.

## TREATMENT OF TYPHOID FEVER.

In the *Medical News* for July 14, 1894, FISK, of Denver, describes his treatment as follows; he has certainly obtained very good results:

Absolute rest. If the patient is seen early in the attack, as gauged by the absence of rose spots and other constitutional symptoms, the writer gives 5 grains of calomel at night, and follows it with a Seidlitz powder or some saline in the morning, and this is the only administration of calomel during the progress of the disease. He then puts the patient on an absolute milk diet, giving a tumblerful every three hours. As a rule, the writer is not influenced by the patient's ideas that it is impossible to take milk, but determines that by his own observation. When he finds this to be true, he has the milk peptonized, and sometimes changes to buttermilk. Extractive matters in the way of broths and extracts are not used, as they always seem to be harmful.

The turpentine mixture used is becoming well known in our hospitals and is meeting with great favor. It is constituted as follows:

R Ol. terebinthinæ, fʒii;  
Ol. ricini, fʒii;  
Bismuth subnit., ʒiii;  
Mucil. acaciæ, q. s. ad fʒiv. M.

This must be shaken well, and a teaspoonful given in a little water twenty minutes after the goblet of milk.

The turpentine in this formula seems to be sufficient to keep the tongue moist and to stimulate the bowels; the castor oil keeps up the secretions, and the bismuth acts, as is well known, as a dressing to the inflamed mucous surface; the last also has a constipating effect, which is overcome by the administration of castor oil (from a dessertspoonful to a table-spoonful) every other morning. For the restlessness of the first few days, which is especially marked at night, he uses either 5 grains of Dover's powder, to be repeated once or twice during the night, or 10 drops of McMunn's elixir of opium, to be repeated once or twice, if needed. Water, iced, if preferred, is given freely; lemonade, not too sweet, is allowed, but not to conflict with the taking of the milk. Antipyretics, like antipyrin, antifebrin, acetanilid, phenacetin, and even quinine (for its antipyretic effects), are absolutely forbidden. Stimulation he reserves for necessity, as indicated by marked nervousness, a rapid and feeble pulse, and for the stage of convalescence. In both instances whiskey is preferred, care being taken to secure a good quality. Of heart-tonics, strophanthus is given rather a preference, and at times he resorts to hypo-

dermic injections of strychnine. He has never used the cold baths of Brand; at the utmost, sponging with tepid water seems to be sufficient, though not often employed.

He believes that great care must be taken in feeding a patient in the stage of convalescence. He thinks it is well to keep him on the milk diet indicated, increasing, however, the amount, if needed, for a week after the temperature has come to the normal. He then begins to feed very gradually, preferring animal to starchy diet.

It will be seen that the methods employed are quite different from those advocated by others. The strict adherence to a milk diet is, of course, nothing new, and as far back as 1866 we find Dr. Cotting, of Roxbury, Mass., reporting in the London *Lancet* three hundred and seven cases of typhoid fever treated without drugs of any kind and a mortality of only ten per cent.

Professor Osler, in his recent publication, says, "Milk is the staple article of diet, of which from 3 to 4 pints are given in the twenty-four hours." This is about the amount the writer used.

Dr. Hutchinson says, "Milk as an article of diet is unquestionably to be preferred to all others in typhoid fever."

The administration of turpentine was advocated by the late Professor George B. Wood and indorsed by Dr. Hutchinson, though the dose employed was greatly in excess of that found in the turpentine mixture.

## THE COLD POULTICE AS AN ANTI-PYRETIC IN HIGH GRADES OF FEVER.

BEDFORD BROWN, in the *Virginia Medical Monthly* for September, 1894, advises the use of the cold poultice. He orders that a sufficient quantity of flaxseed meal to prepare a poultice of suitable dimensions be placed in a common earthen bowl, and over this is poured boiling water, while the meal is constantly stirred with a large spoon until cooked to the consistency of soft mush. This material is then spread on a piece of soft cotton cloth, for an adult, about eighteen inches long and twelve or fourteen wide, or sufficiently long to cover the entire abdomen, from the pubis upward, extending at least half-way up the chest, well over the cardiac region, so as to fully cover the heart and half of the chest. This poultice is now covered with another piece of cotton of corresponding dimensions. After being spread and covered, the entire surface to be applied



to the person is frequently besprinkled with ice-water until its temperature goes down to 68° or 70° F., when it is ready for application. At this point the author suggests that the poultice be not spread too thick, as in that case it would prove oppressive to the patient.

The poultice as thus prepared is applied over the chest, from above the cardiac region to the pubis. In the writer's experience with it, which dates back fifteen years, he has never known it produce shock to the nervous system or discomfort to the patient. On the contrary, patients with high fever, who have learned its advantages, will often request it when they feel sensations of rise of temperature. Its work, different from that of the cold bath, is accomplished slowly, gradually, gently, and effectually. The cold poultice applied in this way is a good substitute for the cold bath, without its many disadvantages, dangers, and difficulties of application.

In cases of fever, with a dangerous degree of hyperpyrexia, say 106° or 106.5° F., with delirium, insomnia, constant restlessness, contracted pupil, scanty, high-colored urine, these symptoms clearly indicate that this intense degree of temperature is exerting a destructive influence on the great nervous centres,—the brain and spinal cord; and if prompt measures are not taken to reduce this hyperpyrexia to a safe degree, the brain and spinal cord will be overwhelmed in hopeless ruin. This can only be accomplished either by the cold bath, internal antipyretics, or the cold poultice. In certain cases in the author's practice the latter measure, applied over the entire spinal column, from the cervical vertebrae to the sacrum, with these symptoms, has exerted a marvellous effect in relieving the nervous system, in subduing inordinate nervous erethism, relieving delirium and restlessness, and in promoting sleep.

In a case of this kind, during a relapse from a four weeks' illness, where the temperature approached 106° F., pulse 130, utter sleeplessness, and constant restlessness, a long poultice, at 70° F., was applied from above the cardiac region to the pubis; another, at the same temperature, ten inches wide, was applied over the nucha to the sacrum, and the head having been shaved, an ice-bag was applied over the head. In two hours there was a reduction of two degrees; in twelve hours a reduction of five degrees, with copious warm perspiration, with the result of refreshing sleep, nervous composure, relief of delirium; and reduction of the pulse to 100. On one or two occasions subsequently, when there was manifested a disposition of these symptoms to return, the same remedies were applied, with identical

results, and under the usual treatment the case terminated in recovery.

In the treatment of acute peritonitis the powers of the cold poultice have not been tested by him as an antipyretic and antiphlogistic. He believes that in this class of cases poultices, at a temperature of 70° F., applied systematically at intervals of one hour, would exert a beneficial influence.

There is a certain degree of art to be observed in the preparation of these poultices. They should not be spread so thick and heavy as to weight down the patient and cause a sense of oppression; not over a quarter of an inch in thickness, and then reduced to a uniform temperature, as tested by the clinical thermometer. In cases of temperature not exceeding 102° F., Brown often orders a cold poultice at first made with hot water, and then permitted to cool either by the atmosphere or application of ordinary hydrant- or pump-water, and obtains excellent results.

#### SOME POINTS IN THE TREATMENT OF TYPHOID FEVER.

In the *Medical Press and Circular* for August 22, 1894, BROADBENT writes on this topic. In intestinal hemorrhage the treatment on which the author has come to rely is the placing of a large ice bag over the right iliac fossa, the administration of a full dose of some liquid preparation of opium, and the subcutaneous injection of ergotin. 10 or 15 minims of turpentine may also be given every three or four hours. The object of the opium is to paralyze the bowel. The blood poured out into the intestinal canal excites peristalsis, and the peristalsis, in turn, tends to prevent the formation of clot on the bleeding surface, which might seal up the vessels. It must, therefore, be arrested; and it is because opium given by the mouth appears to effect this better than morphine hypodermically that this method of administration is preferred. ½ drachm of laudanum, or its equivalent of liquor opii, may be given at once. Opium, again, seems to have a certain sustaining power. Astringents, supposed to act directly on the bleeding vessels, are useless; long before they have traversed the twelve or sixteen feet of bowel to reach the ulcers they will have expended their power of coagulating blood or astringing tissues. When the medical man lives at a distance from the patient, the nurses should be provided with an ice bag, laudanum, and hypodermic pellets of ergotin, and have instructions to employ them immediately on the occurrence of serious hemorrhage.

threatened from peritonitis, the important point is careful cleansing of the entire peritoneum. The operation should be performed at the earliest possible moment,—that is, as soon as primary shock has passed off. The incision should always be in the middle line. The main efforts of the surgeon should be concentrated on cleansing the peritoneum. This is best accomplished by flushing. Normal saline solution or common salt, one drachm to the pint, affords the best medium; next to that is boiled water, to be used at 110° to 112° F. The flushing must be systematic; no time or care must be spared to make this flushing absolutely thorough; it is the essential vital step in the whole operation, the one upon which success or failure hinges. Where practicable, the hole in the stomach should be sewed up, Lembert's sutures being so passed as to invert the floor of the ulcer and a part of the surrounding walls. There appears to be no advantage in excising the ulcer or paring its edges. Should the ulcer be so placed that sutures cannot be placed efficiently, or if its edges are so widely infiltrated that they cannot be enfolded, the surgeon must choose between making a gastric fistula and simple drainage of the stomach; the latter is usually preferable,—i.e., pass one end of a tube into the ulcer and bring its other end out of the wound, and then pack it well round with iodoform gauze. Drainage should always be employed when peritonitis is well marked at the time of operating, the tube being placed in a separate wound above the pubes. Where there is any doubt as to the security of the gastric sutures, a large drain should also be placed with one end close to the ulcer.

When collapse occurs, and hot irrigations do not relieve it, intravenous injections of saline solution are indicated. Up to the present seven successful cases have been reported.

As to the subphrenic abscess, operation should be postponed until the abscess can be distinctly localized. Many of these ulcers run a chronic course, with no distinct indication of their exact position. It is better to wait until the position of the abscess is defined by swelling, or altered percussion-note, or other sign, when a free posterior opening should be made, if it is at all practicable.

Gould next took up the subject of perforation from typhoid ulceration of the intestine. Of seventeen reported cases there is one recovery. The details of operations are like those for perforative gastric ulcer. Perforation occurs most frequently in the third week of the disease, is usually single, and situated in

the ileum. Moreover, this complication may occur in the mildest cases, and causes twenty per cent. of the deaths in this disease. Symptoms may be fulminant or latent. Life is rarely prolonged beyond two days.

VAN HOOK's conclusions, which have appeared in a previous number of this journal, are quoted.

MACLAREN reported three cases of perforation of the stomach treated by operation, one successfully. He holds that it is not worth while to spend much time in washing out the stomach in these cases. He also emphasizes the importance of thorough cleansing of the abdominal cavity. This should be gone over systematically, and with a large, continuous stream. He begins in the neighborhood of the rupture, washes it thoroughly, then follows the course of the colon towards the cæcum, especially washing out below the liver. Next, beginning at the ulcer, the great bowel is followed to the rectum. The lumbar and pelvic hollows should receive special care. Finally, the douche is directed among the folds of the mesenteric attachments of the small intestines. It often happens that when all seems clear a fresh turn of the instrument will empty some unexpected pocket. The abdomen should be dried with sponges in the usual way. Feeding should be per rectum for a week.

MORRISON reported a case operated on by Aitchison. The ulcer was in the posterior wall. The patient died on the ninth day, of peritonitis limited to the pelvis.

BARLING reported three cases of perforation from gastric ulcer; two perished. The successful case was opened three weeks after operation for a circumscribed collection of pus in the left hypochondrium.

COUSINS incised and drained two cases with successful results.

HARRISON reported two cases of typhoid perforation. The first two perforations were found and closed; the patient perished in seventeen hours. The second case was not one of perforation, the symptoms having been caused by kink of the small intestine. The case recovered, although operated on in the acute stage of typhoid.

#### REVOLVER WOUND OF SKULL.

This case, reported by SCHWARZ (*Arch. de Laryngol.*, etc., July, August, 1894), was one of attempted suicide by means of two shots in the right fronto-temporal region. No apertures of exit were found. There was complete

consciousness, paralysis of the right abducens nerve, blindness of the right eye, and copious epistaxis. The man left the hospital in eleven days in good condition, but with a continuance of the ocular abnormalities. Six months later he returned, having had severe epistaxis at long intervals, and having become extremely anæmic. A severe epistaxis occurred, being most marked from the left nostril. The left external carotid was tied, and for some days there was no hemorrhage. Bleeding returned, however, most severely from the right nostril, and the right external carotid was ligatured. Two days later epistaxis returned as severely as ever. Schwarz felt sure that the blood came from the internal carotid artery, and determined to explore the cavity of the nose, which he exposed by Ollier's operation of turning this organ down. He was then able to pass his index finger into both sphenoidal sinuses, which communicated, where he found clots of blood. He plugged the sinuses with iodoform gauze, which he left for a fortnight. He then removed the plugs, and in less than another fortnight dismissed the patient free from his trouble. He made a good recovery.—*British Medical Journal*, October 6, 1894.

#### STERILIZATION OF CATGUT.

EASTMAN (*Annals of Surgery*, vol. xx., No. 1, 1894) sterilizes catgut by heating it to  $212^{\circ}$  F. for three hours in olive oil. He claims that a strong, smooth, absolutely sterile catgut is thus prepared.

#### CRANIECTOMY IN MICROCEPHALUS.

BECK (*Journal of the American Medical Association*, November 3, 1894) concludes a very thorough statistical study upon the subject of craniectomy in microcephalus as follows:

Craniectomy is a justifiable operation and apt to be successful in the treatment of microcephaly with idiocy.

The success depends on the kind of microcephaly and the degree of idiocy.

Acquired and late forms give a better prognosis than congenital forms.

The danger of the operation is not very great.

The operation ought to be quite extensive,—that is, the incision in the skull large enough to permit dilatation,—and the circular method of Gersuny ought to be given a trial.

The patients must be given a thorough pedagogic treatment afterwards.

The single cases ought to be followed up for years and reported from time to time.

The mortality in seventy-two reported cases is seventeen per cent. The dangers of operation are shock, hemorrhage, and infection. As a means of lessening shock, chisel and hammer should be discarded. The operation should be pushed as rapidly as possible, and hot applications to the head are advisable. Hemorrhage may be serious, but is rarely so. Bleeding from the skull can be checked by an Esmarch rubber band fastened tightly around the head. Should the dura be injured it must be sewed.

Of the twelve fatal cases, death was due in six to shock, one to heart failure, one to loss of blood, two to infection, and in two no cause was assigned.

#### OPERATION IN PERITONEAL ADHESIONS.

NICAISE (*Rev. de Chir.*, August, 1894) states that the use of antiseptic methods and the consequent development of antiseptic surgery have made surgeons better acquainted with peritoneal adhesions, and have led to their successful treatment by operation. These adhesions may give trouble by disturbing the functions of implicated organs and by exciting pain. The painful sensations vary in character and intensity in different cases. They may be caused by displacement of the organs to which the adhesive bands are attached, or by constriction of the intestinal canal. The pains in the latter condition are often very severe, and of a similar nature to those of hepatic and renal colic. The diagnosis of peritoneal adhesions is often very difficult; in some cases their existence can be assumed only by a process of exclusion, whilst in others, certainty as to their presence or absence cannot be attained except by an exploratory laparotomy. The author is of opinion, however, that a diagnosis may be made in many cases by close inquiry concerning such details as the previous occurrence of abdominal inflammation, the seat of the pain, and the relation of such seat to that of old inflammatory attacks; the time when the pain comes on with regard to the taking of food, and, in females, to the periods of menstruation. As many peritoneal adhesions become longer and thinner, and have a tendency to disappear, there should be no hurry in having recourse to operative treatment. When, however, they cause very severe and frequently renewed pain, although the

compression of an abdominal belt or bandage or massage may give relief, the only method of dealing effectually with such trouble is the performance of laparotomy and the destruction of the adhesions. The cure that may be thus effected will be complete and permanent; but, it is pointed out, as laparotomy is a serious operation, unless practised under very strict antiseptic conditions, it ought not to be applied in cases of peritoneal adhesions unless these cause intolerable pain.—*British Medical Journal*, October 20, 1894.

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## Reviews.

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PRACTICAL URINALYSIS. By Charles W. Purdy, M.D. Illustrated.

Philadelphia: The F. A. Davis Company, 1894.

Dr. Purdy is very well known to many members of the profession for his valuable contribution to the study of diabetes and to some extent for his work in urinary analysis. The present volume, while it adds nothing of very great note to the subject of which it treats, is a well written, accurate contribution to the literature of the subject.

We can heartily recommend the book to those of our readers who wish a complete manual and who desire a volume which will aid them in their microscopical studies by reason of the many illustrations which it contains, quite a number of which are colored.

THE PHYSICIAN'S VISITING-LIST FOR 1895. Forty-fourth year of its publication.

Philadelphia: P. Blakiston, Son & Co., 1895.

When a visiting-list has obtained the popularity of Blakiston's, nothing more is necessary at the beginning of each season than the announcement that the publishers have continued its issuance as in previous years. While maintaining all the advantages which it has possessed in the past, nothing new has been added to the present issue which is worthy of notice, and the words of praise which we gave last year's issue are entirely applicable to the publication for 1895.

ESSENTIALS OF DISEASES OF THE SKIN. By Henry W. Stelwagon, M.D., Ph.D. Third edition, revised and enlarged.

Philadelphia: W. B. Saunders, 1894.

If there is any subject which lends itself readily to the form of questions and answers, it is probably dermatology, and Dr. Stelwagon

has utilized the possibilities of this form of book-making to the highest degree in preparing his little manual. The half-tone illustrations which have been introduced into this edition very materially increase its value, while the clear and concise descriptions concerning the diagnosis and treatment of various skin-affections, endorsed as they are by the author's wide experience, render any advice he may give reliable and accurate. We doubt not that Dr. Stelwagon's book will continue to grow in popularity.

A SYNOPSIS OF THE PRACTICE OF MEDICINE. By William Blair Stewart, A.M., M.D.

New York: E. B. Treat & Co., 1894.

We regret that we cannot review this book as favorably as we would like to do. It gives evidence of crudity in style and expression which condemns it as a book for the student, and in many places is so imperfect in its description of the diagnosis and treatment of disease as to convey an erroneous idea to the mind of the reader. Thus, under the head of Parotitis, the only point named under diagnosis is the eating of a sour pickle or lemon. Under Tetanus, we are told that it is *probably* due to a micro-organism, which is hardly the present view of the case.

We are surprised to find under the same character of head as is found at the top of the description of each disease, the word Tuberculin, which might, therefore, be considered by the tyro as a disease and not as a remedy.

TEXT-BOOK OF MEDICAL CHEMISTRY FOR MEDICAL AND PHARMACEUTICAL STUDENTS AND PRACTITIONERS. By Elias H. Bartley, B.S., M.D. Third edition, revised and enlarged. Illustrated.

Philadelphia: P. Blakiston, Son & Co., 1894.

The student of medicine often finds in medical chemistry much that is difficult to understand, especially if his knowledge of general chemistry is limited.

The arrangement of a book, the definitions, etc., add much to its value. Many books contain much that is valuable, but the subject-matter is presented in such a manner as to confuse instead of making clear to the student the subject discussed. In this book the author has not only demonstrated his thorough knowledge of the subject, but has written in a manner which clearly shows him to be a teacher as well as a writer, by placing that which is essential in such a manner as to at once arrest the attention of the student.

The greater part of this book is necessarily a compilation, differing only in individuality in

presentation from other works, yet much has been added which is new and of practical value. The book is arranged to cover the more extended course now given in most medical colleges.

The chapter on physiological and clinical chemistry is the most valuable addition in this edition, especially that portion devoted to the examination of urine. The appendix contains many valuable and useful tables. In this third edition the author deserves the same support of the profession which his previous editions have merited.

D. B. K.

**ESSENTIALS OF CHEMISTRY AND TOXICOLOGY.** By R. A. Witthaus, A.M., M.D. Twelfth edition. New York: William Wood & Co., 1894.

In sixteen years twelve editions of this very diminutive little quiz-book, which is arranged in the form of questions and answers, have been called for. Just small enough to fit a pocket, we can readily understand how medical students have pored over its pages in brief moments of leisure when they wished to refresh their memories as to some major point which had slipped from them in the hurry of their other work. Professor Witthaus is too successful a teacher to wish his students to depend upon so small and incomplete a book for their chemical knowledge, and has, as is well known, prepared a larger volume, which, in popularity, has almost equalled the minute one we are now noticing.

**A MANUAL OF HUMAN PHYSIOLOGY. PREPARED FOR STUDENTS OF MEDICINE.** By Joseph H. Raymond, A.M., M.D. Illustrated. Philadelphia: W. B. Saunders, 1894.

The author of this little octavo volume of less than four hundred pages tells us in his preface that a long experience with medical students has brought him to the conclusion that some very thorough and brief work upon physiology would be of particular value to them. He has therefore attempted to cover this important subject in the brief space which we have named.

The volume is larger than a quiz-book and far smaller than a complete text-book, and we do not think that for these and other reasons it can be recommended either to the student or graduate, as the statements which it contains are so exceeding concise as to be imperfect, and its character is too elementary for the student of medicine to obtain a sufficiently deep knowledge of this fundamental subject in medical study. We doubt not that it may prove useful to classes in physiology in high schools or similar institutions.

**A CLINICAL MANUAL AND GUIDE TO THE PRACTICAL EXAMINATION OF THE EXCRETIONS AND SECRETIONS AND OF THE BLOOD. FOR THE USE OF PHYSICIANS AND STUDENTS.** By Andrew MacFarlane, A.M., M.D. New York: G. P. Putnam's Sons, 1894.

This book, which is a small octavo and contains less than one hundred and fifty pages, is, we think, one of the best brief summaries of clinical diagnosis that has been published for some years. It is copiously illustrated, and describes carefully the most recent means employed in urinary and other examinations, as, for example, the employment of the centrifuge. The various well-recognized tests in clinical analysis are carefully but briefly given, and a sufficient number of illustrations, colored and otherwise, are introduced to properly elucidate the text. Whenever there is a possible source of error in the tests which are suggested these possibilities are carefully pointed out.

We can heartily recommend the book to the busy, active practitioner, as giving him in a nutshell the necessary points in clinical diagnosis which he needs in daily practice.

**PRESCRIBING AND TREATMENT IN THE DISEASES OF INFANTS AND CHILDREN.** By Philip E. Muskett. Third edition.

Edinburgh: Young K. Pentland, 1894.

After looking over this book and the numerous polypharmaceutical prescriptions which it contains, we cannot avoid calling attention to the author's name and its similarity with what is known as the "shot-gun prescription." In many instances, however, the compiler has obtained from the writings of recognized authorities upon pediatrics very valuable diagnostic and therapeutic points, and the book is therefore not as bad in its influence as might be imagined by a brief glance at its pages. We doubt very much whether it will prove of much value or interest to the American practitioner.

The first half of the book is taken up with the various drugs and other applications to children's diseases and the second half to the treatment of disease in infants and children, while the end, which is known as Part III., perhaps forms the most valuable portion of the brochure, giving a number of recipes.

**LOCAL ANÆSTHETICS AND COCAINE ANALGESIA: THEIR USES AND LIMITATION.** By Thomas H. Manley, A.M., M.D.

St. Louis: J. H. Chambers & Co., 1894.

Dr. Manley is such an enthusiastic worker in surgery that we regret having to adversely criticize his contribution to this important subject. In his dedication he tells us that the book is a "hurriedly written contribution," which is an admission of a fact which any one who reads

the pages speedily discovers, and his remark in his preface, that the age is one of "lightning progress," should, we think, have caused him, in writing upon so new a subject, to do as St. Paul did, "cast four anchors out of the stern and pray for the day." That care should be exercised in writing a book dealing with so important a topic is evident to every one, and the neglect of such care fails to render medicine the service which Dr. Manley is so well capable of rendering.

We hope that, should the book ever come to a second edition, Dr. Manley will go over its pages and carefully revise them from the point of view of the surgeon and *littérateur*.

A COMPEND OF THE PRACTICE OF MEDICINE, CONTAINING A SECTION ON SKIN-DISEASES AND ONE UPON MENTAL DISEASES. By Daniel E. Hughes, M.D. Fifth edition, thoroughly revised and enlarged.

Philadelphia: P. Blakiston, Son & Co., 1895.

This book has now been before the profession for some twelve or thirteen years, and has, as our heading indicates, been revised a number of times by its author, who has endeavored to compass the difficult task of putting in all the new things in medicine without increasing the size of the book to the dimensions of a text-book. He has also changed its character somewhat from that of a compilation of the views of others, in that he has included in many instances the results of his own personal experience, which has naturally been rich, because of the opportunities which he has had as the chief resident physician in one of the largest hospitals in the world. The volume, which is a small octavo of five hundred and sixty-eight pages, is the best of its kind with which we are acquainted, and we heartily recommend its use by the student, provided he will also employ as his chief source of learning the lectures upon the practice of medicine which he is supposed to attend and the large and complete text-books on practice which all good medical institutions recommend to their classes.

TEXT-BOOK OF HYGIENE. By George H. Rohé M.D. Third edition, thoroughly revised and largely rewritten. Illustrated.

Philadelphia: The F. A. Davis Company, 1894.

The third edition of Dr. Rohé's book on Hygiene has been enriched by a new chapter on Quarantine by Surgeon-General Wyman and Dr. Geddings, of the United States Marine Hospital Service, while Dr. Gihon, of the navy, has revised his original chapter upon Marine Hygiene, and Dr. Egbert, of Philadelphia, that upon Vital Statistics.

Up to the time of the publication of the

book on Hygiene by Coplin and Bevan, which was published about a year ago, there was no volume published in this country which in character and price made it suitable to use as a text-book in a medical school. We now have two contributions by American authors of which the profession in this country may be proud. The present volume contains about five hundred and fifty pages, and is printed in unusually large type on good paper.

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## Notes and Queries.

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### DIPHTHERIA ANTITOXINE.

We are glad to be able to announce that Parke, Davis & Co., of Detroit, are engaged in the preparation of diphtheria antitoxine. As it requires a considerable length of time to prepare the serum, they are unable to provide it at once, but expect to be able to supply the profession very shortly.

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### THE INDEX MEDICUS.

The *Index Medicus* will cease to be published with the February number, owing to lack of support and the fact that a large number of its subscribers are delinquent, *unless an effort is made to continue it*.

The value of this publication to those who do any work at all in connection with medical literature is so great that it should receive the hearty support of the profession, and it is hoped that a sufficient number of persons will become subscribers to permit of its continuance.

This is particularly necessary, owing to the fact that, after the completion of the supplementary volumes of "The Index Catalogue of the Surgeon-General's Library," there will be no record of contemporary medical literature, and he who desires to keep pace with it, or who wishes to study a particular subject, will have to resort to the laborious task of seeking in various journals that which he desires, if the publication of the *Index Medicus* ceases.

It will be possible to continue the *Index Medicus* if only five hundred new subscribers are obtained, and as the use of the *Index* is world-wide, this should be readily accomplished. The subscription price is ten dollars per annum, which should be sent to Mr. George S. Davis, publisher of the *Index Medicus*, Box 470, Detroit, Michigan, U.S.A.,

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